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Smile4life

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the oral health of homeless people across Scotland

Smile4life



Report of the Homeless Oral Health
Survey in Scotland, 2008-2009

Smile4life

Report of the Homeless Oral Health Survey in Scotland, 2008-2009

**Foreword by Margie Taylor,
Chief Dental Officer**

SCOTTISH COUNCIL FOR
SINGLE HOMELESS



Preface

Barrie Greenan

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Until the opportunity of dental treatment came my way I was resigned to a life of constant pain. When I was homeless I would sleep rough in bridges suspended over the River Clyde. There was no possibility of dental care, to get access to treatment you need an address or photo ID - a sleeping bag in a girder didn't qualify.

Back then I was a drug user and alcoholic, to get relief from the pain I would inject heroin into my gums - methadone only worsened the decay. We (the homeless) would resort to pulling our own teeth or self-medicating with more alcohol and drugs - a vicious cycle.

In the past I would watch people smile and their smile would be returned, but not for me. I was embarrassed to laugh in public and ashamed to smile in front of my daughters. Toothlessness only lowered my self-esteem which never lifted from rock bottom - until now. The social stigma that excluded me from mainstream society has been removed and I can now move forward with confidence. Everyone in society, especially the homeless and vulnerable, should have the opportunity to access dental care - the effects are transformative.

Barrie Greenan



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Foreword

Margie Taylor, Chief Dental Officer

It is important that everyone is able to enjoy good health all through life, including good oral and dental health. Being without a home can make this more difficult. In this situation, people can find it harder to maintain basic self care and may not easily be able to use dental services in traditional ways. Those experiencing homelessness should have the same opportunities as others to enjoy good oral health, be aware of how to prevent oral diseases, know how to look after their mouths and access treatment.

The Smile4life Report provides planners and those who work with homeless people with information on the health and views of people experiencing homelessness in Scotland which will help them to support people to maintain and improve their oral health during a period of homelessness.

Providing the right kind of care for people who are homeless is a team effort. We need to ensure that all those who care for such individuals are aware of what is required to support the oral health needs of their clients.

I commend this report to everyone involved in working with homeless people to help them achieve good oral health, and hope that with its unique insight into the oral health needs and aspirations of people experiencing homelessness, it will prove to be both a valuable resource and a source of encouragement to all who read it.

Margie Taylor



Introduction to Smile4life

Robert Aldridge, Chief Executive,
Scottish Council for Single Homeless

In 2001 Scotland's Homelessness Task Force published its final report and recommendations for tackling homelessness in Scotland. In addition to changes in legislation it proposed a broad framework for preventing homelessness and finding sustainable solutions for those affected by homelessness.

A key element was the recognition that many homeless people find it difficult to access a broad range of health services, even though their health needs can be even more pressing than the community at large. Health Boards were given a duty to develop Health and Homelessness Action Plans and national Health and Homelessness Standards were introduced.

It can be very difficult for homeless people to sustain continuity of care, to meet appointments made a long time in advance or to participate in health improvement activities. Maintaining contact with GPs, dentists and other professionals can be especially difficult if the household is accommodated temporarily some distance away.

Many homeless people are coping with a combination of very urgent and immediate issues. So health care and dental care slip down their list of priorities, only surfacing when the problem becomes acute and the need for attention is urgent.

The general health needs of homeless people have been relatively well documented over the years. Less attention has been paid to other important aspects of their health and well being. All too often matters such as dental health have not been seen as a priority.

This research demonstrates how important it is for homeless people not only to have access to emergency dental services, but also to regular dental treatment. It demonstrates quite starkly how embarrassed and inhibited people can feel when they have poor dental care. It shows how important it is for dental health services to be considered as a key element of a health and homelessness action plan.

Scotland has a very progressive framework for tackling homelessness and meeting all the needs of homeless people. The challenge is to use the findings from this research to help ensure that the ambitious framework is matched by actions.

Robert Aldridge

Acknowledgements

The Steering Group would like to thank the contributions made to this oral health and health needs assessment by the Scottish Government Health Department and all the NHS Boards whose support facilitated the collection of the data (award number 121.804497).

We would like to acknowledge the people who participated in the Smile4life survey and qualitative exploration. We would also like to thank all those health professionals who collected the quantitative data and facilitated the collection of the qualitative data.

We would like to thank Sheela Tripathee for her assistance in the formatting and preparation of this report.

Steering Group

The Smile4life steering group was convened in November 2007. It consists of representatives from DHSRU (E. Coles, J. Collins, R. Freeman); Glasgow Homeless Network (S. Plotnikoff); NHS Health Scotland (L. Hunter); NHS Ayrshire & Arran (M. Edwards); NHS Forth Valley (P. Cushley, T. Everington, D. Richards); NHS Greater Glasgow & Clyde (A. Heffernan, G. O'Malley); NHS Highland (R. Brown, K. Edmiston, R. Freeman); NHS Lanarkshire (A. Moore, C. Watt, A. Yeung); NHS Lothian (C. Cunningham); NHS Tayside (M. Curnow, G. Elliott, M. Walkden); the Scottish Council for Single Homeless (R. Aldridge).

The report was based on the valued contributions of the people on the Steering Group.

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Ms. E. Coles: Research Fellow, Smile4life Homelessness Oral Health Project, DHSRU

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Executive Summary

Introduction

The exceptional healthcare needs of homeless people in Scotland were recognised by the then Scottish Executive, which in March 2005 produced a set of Health and Homeless Standards, aimed at ensuring that NHS Boards within Scotland gave special consideration to improving the understanding, planning and treatment of homeless people within their Board areas.

The Scottish Executive also recognised, as part of its Action Plan for Improving Oral Health and Modernising NHS Dental Services in Scotland (Dental Action Plan) in 2005,[1] that it would be desirable for NHS Boards to develop and implement oral health promotion (including dental health education and preventive programmes) for priority groups of ‘adults most in need’. People who are homeless were categorised and highlighted as one of the priority groups.

In 2007, when monies became available to develop oral health improvement programmes for priority group patients, including homeless people, a successful proposal was put to the Chief Dental Officer. The proposal was called ‘Smile4life’, and was submitted by a consortium of seven NHS Boards, co-ordinated by NHS Highland.

The aim and objectives of the Smile4life programme

The aim of the Smile4life proposal was to facilitate the development, implementation and evaluation of evidence-based oral health preventive programmes for homeless (roofless and houseless) people throughout Scotland.

The specific objectives were to:

1. Conduct a needs assessment to inform the current oral health and preventive oral health needs from the homeless (roofless and houseless) clients’ perspective (Smile4life oral health survey and qualitative exploration).
2. Conduct a needs assessment as viewed from health professionals’ perspective.
3. Scope current models of oral preventive service and practice for homeless populations in Scotland.
4. Develop and evaluate an evidence-based oral health care preventive package tailored to the specific needs of homeless (roofless and houseless) populations in Scotland.

This report addresses the first objective of the Smile4life programme. Therefore, the aims and objectives of the work presented here are as follows:

1. The aim of the Smile4life oral health survey

The aim of the Smile4life oral health survey was to conduct an oral health and general needs assessment as the first stage in the development of the Smile4life programme.

The specific objectives were to assess, for this sample of homeless people in Scotland:

1. their demographic profile;
2. their health and health behaviours;
3. their oral health and oral health behaviours (including barriers to dental care and previous treatment experiences);
4. the degree of patient management complexity;
5. their psychosocial health (including dental anxiety, oral health-related quality of life and depression).



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2. The aim of the Smile4life qualitative exploration

The aim of the Smile4life qualitative study was to use grounded theory procedures and techniques to analyse the qualitative data obtained from one-to-one interviews with homeless people. The objective was to identify the main issues and problems of homeless people and explore the ways in which they managed or resolved these issues. The findings will provide an insight into, and thus foster an understanding of, the lives of homeless people in Scotland and their oral health concerns.

Following the quantitative survey and qualitative exploration, recommendations will be made to promote oral health and to increase access to oral health care among homeless populations in Scotland. The report will propose overall recommendations for an oral health improvement programme for homeless populations in Scotland.

Smile4life oral health survey findings

A total of 853 homeless people took part in the survey, which was conducted in seven NHS Board areas. The main findings were:

1. Demographic profile

This sample population would appear to be representative of people who may be categorised as homeless since they were similar in their demographic profile to other homeless groups residing in Scotland and Northern Ireland.[2, 3] Their health, health behaviours, oral health status, oral health-related attitudes and behaviours were also similar to other populations of homeless people across Europe.[4]

2. Oral health and oral health behaviours

The oral health of this sample of homeless people was poor. Of the 728 participants who had an oral examination, 98% had experience of dental decay. The mean number of teeth affected was 16.98. The greatest proportion of the obvious decay experience was explained by extracted teeth (52%), with smaller proportions explained by decayed teeth (27%) and filled teeth (22%). The increased prevalence of decayed and missing teeth suggested that this population of homeless people attended for dental treatment only when experiencing pain. This was reflected in the wish of over 79% of the sample to have a drop-in centre which could be easily accessed at times of need.

Differences in obvious decay experience varied with age and gender. Older homeless people had

greater numbers of extracted teeth while younger homeless people had greater numbers of decayed teeth. Women compared with men had greater numbers of decayed but lower numbers of filled teeth.

Up to 4% of participants were noted to have suspicious oral lesions that required referral. This prevalence of oral lesions compared unfavourably with the settled Scottish population in which oral cancers are found in 1% of the population.[5]

The participants' oral hygiene was surprisingly good with plaque generally covering less than a third of the tooth surfaces examined. Only 46 people had no natural teeth (edentulous). One hundred and thirty-nine people stated that they wore dentures. The types of dentures worn were both complete and partial dentures. Over half of the dentures worn were felt to be clinically satisfactory. This was important as many participants felt shamed and embarrassed by the appearance of their teeth.

With regard to their experience of dental treatment, people who took part in the sample stated that they had had teeth extracted (76%), and had experience of abscessed teeth (58%) as well as fillings (85%). The participants' experience of preventive oral health treatments was poor. Although this experience varied with age group, in general the people who took part in the survey had little experience of fluoride treatments (14%) or fissure sealants (15%).

In conclusion, these findings support earlier work, which has shown that the oral health of homeless people is poor and would seem to reflect a pattern of irregular dental attendance associated with pain and discomfort.

3. Health and health behaviours

In terms of health disparities the homeless people in this sample had greater experience of physical ill-health in comparison to the general population. This was reflected by the 63% of the sample who stated that they were taking prescribed medication. Over 20% of the sample stated they suffered from chest disease, bleeding disorder and allergies. Smaller proportions stated they had heart disease and hypertension. Of the total, 54% reported that they were receiving medical treatment from their general medical practitioner and/or from specialists either in primary (clinic-based) or secondary (hospital-based) care.

Health disparities were also reflected in the proportion of the sample population taking prescribed medication for mental ill-health. Thirty-two percent of the homeless sample stated they were taking anti-depressant medication. This reflected the findings of the depression (CES-D) questionnaire which showed that over 58% of the sample were characterised as being depressed.

The majority of the sample (85%) reported being smokers. The number of cigarettes smoked daily increased with age, with younger participants smoking on average fewer cigarettes compared with those in older age groups. The highest proportions of smokers were men (74%) and were to be found in the 35-44 (74%) and 55+ (68%) age groups.

Thirty-one percent (254) of the participants stated that they drank alcohol at least once a day. Although lower proportions of those aged between 25-34 years drank alcohol compared with other age groups, there was a tendency for alcohol consumption to be maintained across older age groups.

Sixty-eight percent of the participants stated that they had used street drugs at some time in their lives, with 29% stating that they were current drug users (of which 24% were injecting drug users at the time of the survey). There was an association between drug use and age, with lower proportions of participants in the 55+ age group having ever used drugs, currently using drugs or being injecting drug users.

In conclusion, these findings supported earlier work which has shown that the general health of homeless people is poor and their health behaviours are detrimental to health.[6]

4. Patient management complexity

Fifty-eight percent of the sample were characterised as having at least one patient management complexity. The most frequent complexity was in relation to oral health. The findings showed a close relationship between obvious decay experience and patient management complexity while those participants characterised as having 'oral health risk factors' had greater numbers of decayed teeth and more plaque covering their teeth compared to the rest of the sample. It was interesting to note that participants with high dental anxiety status were those characterised as having moderate to severe difficulties regarding the patient management complexity 'ability to cope'.

Therefore participants with high scores for attitudes relating to anxiety as a barrier found it difficult to access dental care. This was particularly noticeable in female respondents. However, in general, participants felt that the attitudes of dental health personnel, perceived as negative and unwelcoming, made it difficult to access dental treatment.

In conclusion, participants with increased patient management complexity had greater experience of poorer oral health status and dental anxiety.

5. Psychosocial health

This population of people represents a group who are highly dentally anxious and who have a high prevalence of dental phobia. Over 20% of the sample were characterised as dentally phobic according to the Modified Dental Anxiety Scale (MDAS) measure. The most feared items of dental treatment were the local anaesthetic injection and the drill. Women compared with men were more anxious of all aspects of dental treatment. Additionally, participants from NHS Greater Glasgow & Clyde and NHS Tayside had greater experience of dental phobia compared with other NHS Boards.

The impacts upon oral health-related quality of life were greater in this population in comparison to the Scottish population in the 1998 Adult Dental Health Survey.[5] In particular, impacts in relation to psychological discomfort (feeling self-conscious about the appearance of teeth) and psychological disability (feeling embarrassed about the appearance of teeth) were experienced by 25% and 23% of the sample respectively.

This population represents a sample of people who have an increased experience of depressive illness, with 58% of the homeless sample characterised as being depressed. Women compared to men were more likely to experience symptoms of depression such as poorer appetites, feeling sad and frightened and feeling that people disliked them.

In conclusion, people who are homeless have increased experience of dental anxiety, impacts of embarrassment and self-consciousness as well as depression. It is suggested that these psychosocial factors must be considered as additional barriers to accessing dental care when planning dental health services for homeless populations.



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One-to-one interviews were conducted with 35 homeless people from the Scottish Health Board regions of NHS Forth Valley, NHS Greater Glasgow & Clyde, NHS Lothian, and NHS Tayside. The interviews explored the main issues pertaining to the lives of homeless people, with regard to their oral health, general health and well-being, and their experiences of homelessness.

The main concern that emerged from the qualitative data was 'reclaiming life'. Reclaiming was situated within the context of loss, which was a strong and recurrent theme, and applied not only to teeth or dentures, but to home, family, health, personal identity and a place in society. Loss was particularly pertinent to those who were affected by drug or alcohol misuse.

Some people became trapped or lost within the identity of 'homeless person' or 'drug user', an identity pervaded by the experience of loss, where an over-reliance on homeless services or prolonged substance misuse cushioned them from the harshness of reality. Others, however, were able to address and confront their sense of loss in order to move on and out of homelessness.

Other commonalities across the data included the need to seek safety or comfort, which was often achieved by re-establishing normal daily routines, forming part of the reclaiming process. In essence, the process of reclaiming life centred on the rejection of the 'homeless identity' and the reclamation of individual self-identity. However, reclaiming life was not attainable for all, and many homeless people moved in and out of the reclaiming process. Various factors affected the ability to reclaim life – age, the length of time an individual had been homeless, the severity and depth of the loss experienced, individual resilience and the ability to cope with loss.

Homeless people managed the process of reclaiming life in two main ways – short-term prioritising and long-term prioritising:

1. Short-term prioritising was pervaded by a sense of loss, and involved maintaining the homeless identity and lifestyle, which in turn reinforced the sense of worthlessness and loss. Those who were not yet at the stage where they were fully ready to reclaim their lives exhibited examples of short-term prioritising, which included taking street drugs or drinking to excess, and neglecting their health. This extended to getting used to and even adapting to negative circumstances, and placing themselves in potentially unsafe or threatening situations.
2. Long-term prioritising involved "taking responsibility" for oneself and rejecting the homeless identity. This allowed homeless people to begin to reclaim their lives. Positive behaviours with longer-term goals took precedence, such as participating in a drug treatment programme, seeking a place on a college or training course, taking part in physical activity, or reducing alcohol intake. Resuming responsibility for oral self-care was part of this process. Many of the younger homeless people displayed greater resilience than those who had been homeless for longer periods.

Many long-term prioritising participants described past instances of short-term prioritising, particularly those for whom substance misuse had led to 'lost lives'. Drug addiction maintained the homeless identity and with it came the loss of life chances. The potential for a 'lost life' seemed particularly acute for those who had experienced childhood trauma. Other homeless people began using substances as a reaction to extreme or violent loss.

In conclusion, for many homeless people, the process of reclaiming life consists of a mix of both short-term and long-term behaviours until the individual reaches a point where the long-term continuum of prioritising emerged to account for the majority of the variation in the behaviours of homeless people who were attempting to reclaim their lives.

Recommendations

In line with the aims of this research, the findings from the quantitative survey and the qualitative exploration will be utilised to provide recommendations to promote oral health and to increase access to oral health care in homeless populations across Scotland.

Recommendation 1: Participatory, 'bottom-up' and sustainable approach

The importance of adopting a participatory approach cannot be overstated. It is by listening to homeless people and including them in the process when developing and implementing homeless services or initiatives that their needs and motivations can be fully understood and taken into account when planning acceptable, appropriate and affordable dental services and oral health promotion interventions. Therefore, the unique perspective offered by the homeless people who participated in the Smile4life qualitative exploration must be used to inform the development and implementation of future oral health services aimed at this population.

This programme of work has highlighted first, the need to understand the appropriate indicators of health and secondly, people's main concerns and the behaviours they use to solve their main concerns regarding the experience of homelessness. This provides the ground work to develop an oral health promotion programme based on the needs of people experiencing varying degrees of homelessness, material and psychological deprivation. It is by working from the perspective of the homeless individual that appropriate, acceptable and accessible oral health care may be achieved. Using a bottom-up approach, oral health self-care may become established/re-established within the health repertoire – becoming 'normalised' – thus assisting in the promotion of self-esteem and psycho-social wellbeing in those experiencing homelessness. Further, it is recommended that a sustainable approach should be adopted to promote oral health and enable accessible oral health care for homeless populations across Scotland.

Therefore we recommend that a participatory, bottom-up and sustainable approach should be adopted to enable dental service and oral health promotion strategies to be developed which are acceptable and appropriate to people experiencing homelessness.

Recommendation 2: Role and remit of NHS

- (a) Provision of services and access to care:
The survey highlighted that 48% of homeless people find NHS dental care difficult to find. Therefore it is recommended that the comprehensive, three-tier model of dental services as outlined in Recommendation 3 be available to homeless people in each NHS Board area in Scotland.
- (b) Dental treatment: the survey highlights a lower prevalence of filled or restored teeth among the homeless sample in comparison to the general Scottish population. This is supported by the qualitative evidence which highlighted the reliance of many homeless people on emergency dental treatment. We take the view that patient choice and restorative treatment (e.g. fillings) are rights that should be enjoyed by all dental patients regardless of personal circumstances. Therefore we recommend that preventive and restorative dental treatments be made routinely available to homeless people accessing NHS dental care.

Recommendation 3: Dental services for homeless people

The findings of the survey and qualitative study point to a clear need for a comprehensive dental service for homeless people consisting of three 'tiers' of service:

1. Emergency dental services;
2. Adhoc or one-off 'occasional' single-item treatments that can be accessed without the need to attend for a full course of treatment;
3. Routine dental care/full course of treatment.

The need for a three-tier, yet fully comprehensive dental service is strongly supported by the survey findings. Further, many homeless people find it difficult to access and afford dental care, necessitating the need to provide emergency services for those unable to take advantage of routine dental care. The qualitative findings suggested that homeless people who predominantly solved their difficulties using a short-term approach are more likely to access emergency services as needed, as it is highly unlikely that they will be prepared to attend dental appointments or undertake a course of treatment.

However, those who occasionally long-term prioritise may be more likely to attend a one-off appointment for single item treatment, suggesting the need for ‘occasional treatments’ for homeless people, where a course of treatment or further attendance requirements are not imposed on the patient. In contrast, homeless people who are able to maintain a phase of long-term prioritising have a much greater likelihood of successfully completing a full course of dental treatment and/or adopting a preventive oral hygiene routine.

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Recommendation 4: Oral health promotion for homeless people

The data from the Smile4life survey has provided a series of appropriate health, oral health and psycho-social indicators, while demonstrating the need for a common risk factor approach to promote oral health in this excluded population. Using a common risk factor approach will allow the promotion of oral health for homeless people to be integrated into national health and homelessness strategies and policies, and be implemented at the local and agency level.

- (a) National level: the promotion and improvement of oral health and the availability of and access to appropriately targeted dental services for homeless people should be incorporated into national health and homelessness strategies and policies.
- (b) Local area level: oral health improvement outcomes for homeless people should be incorporated into Single Outcome Agreements, NHS Board Health and Homelessness Plans, and Local Authority Shared Assessments.
- (c) Agency level: it is recommended that oral health promotion for homeless people be integrated not only into other healthcare sectors but also into the housing, education and employment sectors, in order to normalise oral health within the wider homelessness sector. Inter-agency working should be supported by the provision of appropriate and acceptable training across all sectors to increase the understanding of homelessness and oral health in order to increase the capacity of all staff working with homeless people in Scotland.



Background

1.0 BACKGROUND

"Unsatisfactory diet, hardly ever eats, alcohol dependency. He has suffered two heart attacks. Feels insecure and self-conscious about his teeth. Has just been released from hospital in the past week. Stated he has felt more violent than usual. Receiving treatment from the Community Psychiatric Nurse"

(Dental professional, describing a homeless 46 year-old male patient)

The exceptional healthcare needs of homeless people in Scotland were recognised by the then Scottish Executive, which in March 2005 produced a set of Health and Homeless Standards[7], aimed at ensuring that NHS Boards within Scotland gave special consideration to improving the understanding, planning and treatment of homeless people within their Board areas.

The Scottish Executive also recognised, as part of its Action Plan for Improving Oral Health and Modernising NHS Dental Services in Scotland (Dental Action Plan) in 2005, that it would be desirable for NHS Boards to develop and implement oral health promotion (including dental health education and preventive programmes) for priority groups of 'adults most in need'. People who are homeless were categorised and highlighted as one of these priority groups.

In 2007, when monies became available to develop oral health improvement programmes for priority group patients, including homeless people, a successful proposal was put to the Chief Dental Officer. The proposal was called 'Smile4life', and was submitted by a consortium of seven NHS Boards, co-ordinated by NHS Highland. The aim and objectives of the Smile4life proposal were to facilitate the development, implementation and evaluation of evidence-based oral health preventive programmes for homeless (roofless and houseless) people throughout Scotland.

The specific objectives were to:

1. Conduct a needs assessment to inform the current oral health and preventive oral health needs from the homeless (roofless and houseless) clients' perspective.
2. Conduct a needs assessment as viewed from health professionals' perspective.
3. Scope current models of oral preventive service and practice for homeless populations in Scotland.
4. Develop and evaluate an evidence-based oral health care preventive package tailored to the specific needs of homeless (roofless and houseless) populations in Scotland.

This report addresses the first objective. At the time of publication, the first three objectives have been achieved; the final one is underway.



Introduction

2.0 INTRODUCTION

Homeless people face an everyday struggle to find basic elements of human necessity and comfort, such as shelter and nourishment.[8] Perhaps as a reaction to the stressful nature of homeless life, or due to destructive habits already established prior to their homelessness, many homeless people take refuge in unhealthy lifestyle choices such as smoking, alcohol and/or drug use.[6, 9] Being homeless is an impoverishing, isolating and difficult experience, which presents those affected with many issues, which can directly impact upon and potentially compromise their health including oral health.[10] The homeless population as a group is characterised by an increased prevalence of chaotic itinerant lifestyles,[11] deprivation,[12] social exclusion,[13] general ill health,[8] and poor oral health.[10]

2.1 The health risks of homelessness

Health problems experienced by homeless people occur earlier in life in comparison to the settled population, and for those who experience homelessness in childhood, deprivation impacts upon growth and physical factors which determine adult health. Children in homeless families can be susceptible to problems caused by the lack of continuity of health care and restricted access to services[14] compounded by other problems, such as a poor diet. Homeless young people experience depression, anxiety and other mental health problems, which can be compounded by substance misuse.[15, 16] Older homeless people face similar issues, often exacerbated by early onset and thus chronic physical health problems.

2.2 Homelessness and oral health

Homeless people have poorer dental health and experience higher levels of dental caries and periodontal disease than the general population. They have an increased risk of high levels of untreated decay and periodontal disease, often resulting in many missing teeth. High incidences of smoking and alcohol consumption put homeless populations at a higher risk of developing oral cancer.[10]

With regard to the main oral health messages, homeless people have difficulty in complying, in that: first, healthy eating is a virtual impossibility, with meals consisting of cheap snacks, high in sugar and fats. Secondly, oral hygiene, and more specifically plaque control, can be difficult in a homeless setting and in addition, the cost of a toothbrush and fluoride toothpaste means that they are viewed as luxuries rather than essentials. Erratic dental attendance further contributes to poor oral health and increases its impact on the life of homeless people. [17]

In order to direct oral health services towards this socially excluded population, an accurate evaluation of the size of this population and the extent of their needs, as related to the services planned for delivery, is required. In 2004, the British Dental Association (BDA) published *Dental Care for Homeless People*. [18] This BDA document recognised the need to improve the delivery of dental care to homeless people, and as a first step it was suggested that a normative needs assessment be conducted in order to provide homeless people with ‘accessible dental services based on local needs assessments’. [18]

2.3 Mental health and well-being

In addition to the physical and oral health problems and drug and alcohol misuse issues described above, the experience of homelessness can affect an individual’s psychological health and well-being. Homeless people can suffer from low self-esteem, lack of confidence, and loneliness, often as a result of the stigma, social exclusion, unemployment and poverty that tends to be part of the homeless experience.[8] The symptoms of depression and psychotic illness have been shown to be linked with homelessness and quality of life.[19, 20] However, less is known about the relationship between homelessness and poor oral health, mental health and well-being, and quality of life.

2.4 Definitions of homelessness

Homelessness is difficult to define, and accordingly, there is no universal definition, with different groups or organisations employing a range of definitions. In an attempt to classify homelessness and create a pan-European definition, the European Federation of National Organisations Working with the Homeless (FEANTSA) developed the European Typology of Homeless (ETHOS),^[21] which categorises people affected by homelessness within a broad context of accommodation-related definitions encompassing those who are roofless, houseless, living in insecure accommodation, and those inadequately housed (see Table 1). The ETHOS typology provides a useful tool for measuring homelessness and differentiating between different types of homelessness, and also provides comparable data, allowing for comparison among the various EU member states.

2.5 Descriptors of homelessness

In recognition of the diverse nature of homelessness, a list of descriptors and definitions of homelessness ranging from ‘absolute homelessness’ through to ‘statutory homelessness’ is provided in Table 2. The existence of such a multitude of definitions provides acknowledgement that there are a variety of forms of homelessness that can be experienced, and that people affected by homelessness are a diverse group of individuals, with homelessness at its most basic being considered as being ‘without a home’.

2.6 The incidence of homelessness in Scotland

The official measure of homelessness in Scotland is the number of applications to local authorities by households presenting as homeless under the Homeless Persons Legislation. The assessment category of ‘homeless’ includes both those currently homeless and those threatened with homelessness. Yet the true number of homeless people in Scotland remains unknown, as the official statistics include only those who apply to local authorities for assistance. Therefore these figures may exclude for example: some rough sleepers or sofa surfers (usually young people staying with friends on a temporary basis), people in overcrowded or unsuitable accommodation who are unaware that assistance is available, and others who, for whatever reason, do not make themselves known to the authorities. However the number of applications assessed as homeless under the Homeless Persons Legislation is rising.

In the year 2009-10, 56,659 households made applications to the local authorities in Scotland under the Homeless Persons Legislation.^[3] This figure represents a 23% increase in the estimated number of homeless in Scotland over the ten-year period from 1999-00. The majority of applicants (61%) were single people, mainly men; single parent families, predominantly female, accounted for a further 24% of all applications.^[3] Other groups, including couples, young people and older people, are represented among the official statistics. The most common reasons for homelessness in Scotland are household disputes or being ‘asked to leave’, accounting for half of all applications made to local authorities, but many others are made homeless as a result of tenancy termination or rent/mortgage arrears. Other reasons include harassment, overcrowding, loss of tied accommodation and discharge from prison, armed forces, hospital or care.

Following assessment, the number of households described by the local authorities as being homeless in the year 2009-10 was 42,207 (Table 3). A third of those assessed as homeless were found to have one or more additional support needs, with support needed for mental health issues, drug or alcohol dependency or medical conditions, among other reasons. Eighty-five percent of those assessed as homeless were then classified as falling into the priority need categories. Homeless people are classified as in priority need if they have dependent children, are pregnant, are aged under 18, are fleeing domestic violence, are mentally ill, have been made homeless due to an emergency such as fire or flood, or if they are categorized as ‘vulnerable’ as a result of particular circumstances.^[22]

2.7 Summary

The existence of a variety of definitions and descriptors of homelessness provides acknowledgement that there exists a diversity of forms of homelessness which can be experienced, and that homeless people are a varied and dynamic group of individuals, with the most common meaning of the homeless experience being considered as being ‘without a home’.

Table 1: European Typology of Homelessness (ETHOS)

Conceptual Typology		Operational Category
Roofless	1	People living rough
	2	People in emergency accommodation
Houseless	3	People in accommodation for the homeless
	4	People in women's shelter
	5	People in accommodation for immigrants
	6	People due to be released from institutions
Insecure	7	People receiving longer-term support (due to homelessness)
	8	People living in insecure accommodation
	9	People living under threat of eviction
	10	People living under threat of violence
Inadequate	11	People living in temporary/non-conventional structures
	12	People living in unfit housing
	13	People living in extreme overcrowding

Source: FEANTSA

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Table 2: Descriptors of homelessness

Descriptors	Definition
Absolute homeless	Individual with no home and no access to any form of shelter
Chronic homeless	Long-term homeless
Hidden homeless	Individual who is homeless but does not appear on statistical surveys as they have not applied for or do not qualify for housing aid
Houseless	Individual living in temporary or sheltered accommodation
Intentionally homeless	Individual who has voluntarily rendered themselves homeless
Invisible homeless	As for hidden homeless
Legally homeless	Individual without accommodation that they can legally occupy
Roofless	Individual sleeping in unfit or unsafe areas
Rough sleeper	Individual sleeping 'rough' on the streets
Sofa surfer	Individual who, although homeless, is 'doubling up' with family and friends, and so does not seek housing aid
Statutory homeless	Individual who has applied for assistance and has been assessed as having priority need
Visible homeless	Individuals leading an openly homeless existence on the streets

Table 3: Applications to local authorities under the Homeless Persons Legislation 2001-02 to 2009-10

	All applications	Applications assessed as homeless		Assessed as homeless and in priority need	
		Number	% of all applications	Number	% of applications assessed as homeless
2001-02	47,493	37,100	78	26,900	73
2002-03	52,122	40,236	77	29,424	73
2003-04	56,693	43,082	76	31,593	73
2004-05	57,437	41,659	73	31,223	75
2005-06	60,742	43,589	72	32,912	76
2006-07	59,544	42,675	72	32,783	77
2007-08	57,260	41,666	73	33,295	80
2008-09	57,595	41,463	72	33,566	83
2009-10	56,669	42,207	76	36,067	85

Source: Scottish Government. Operation of the Homeless Persons Legislation in Scotland 2009-10.
 Edinburgh: Scottish Government, 2010.

The Aim

3.0 THE AIM

The overall aim of the Smile4life programme is to facilitate and coordinate the development, implementation and evaluation of an evidence-based oral health preventive programme for homeless people across Scotland.

The aim of the Smile4life oral health survey was to conduct an oral health and general needs assessment as the first stage in the development of the Smile4life programme.

The specific objectives were to assess, for this sample of homeless people in Scotland:

1. their demographic profile;
2. their health and health behaviours;
3. their oral health and oral health behaviours (including barriers to dental care and previous treatment experiences);
4. the degree of patient management complexity;
5. their psychosocial health (including dental anxiety, oral health-related quality of life and depression).

The aim of the Smile4life qualitative study was to use grounded theory procedures and techniques to analyse the qualitative data obtained from one-to-one interviews with homeless people. The objective was to identify the main issues and problems of homeless people and explore the ways in which they managed or resolved these issues.

Following the quantitative survey and qualitative exploration, recommendations will be made to promote oral health and to increase access to oral health care among homeless populations in Scotland. The report will propose overall recommendations for an oral health improvement programme for homeless populations in Scotland.

Content of the report

This report is in two parts.

- [1] The first part will report on the Smile4life oral health survey of homeless people in Scotland. This will present the physical, psycho-social well-being and oral health profile of a homeless population in Scotland.
- [2] The second part of the report will present the findings of the Smile4life qualitative study.



Smile4life Survey Method

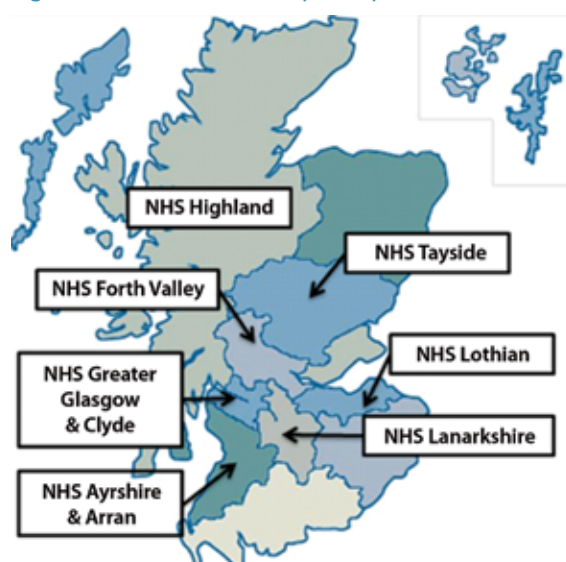
Oral health and psychosocial needs assessment

4.0 SMILE4LIFE SURVEY METHOD

4.1 Sample

A sample of homeless people residing in the Scottish National Health Board regions of NHS Ayrshire & Arran, NHS Forth Valley, NHS Greater Glasgow & Clyde, NHS Highland, NHS Lanarkshire, NHS Lothian, and NHS Tayside were invited to take part (Figure 1). Further information about each of the seven Boards is provided in Appendix 4.

Figure 1: NHS Boards who participated in Smile4life



It was not possible to generate a random sample of participants due to the transient nature of homeless people; therefore a non-probability convenience sampling technique was used. Convenience sampling allowed homeless people to be targeted, and since the survey was conducted between October 2008 and June 2009, the collection period was considered long enough to include seasonal variation within the homeless population.

A number of different localities in each NHS Board were visited several times, in order to generate a snowball effect and thus maximise the number of participants consenting to take part.

Throughout the data collection period, homeless people were invited to take part and those consenting to participate were included. An oral health pack was provided to each participant which included toothbrush and fluoride toothpaste together with information on access to emergency and routine care services within the relevant NHS Board area.

4.2 Training day: standardisation of dental health examiners

Prior to the start of the survey, all participating dentists, dental nurses, dental hygienists, oral health promotion officers, and public health nurses for homeless people who were involved in the data collection and examination of participants, took part in a training day (Appendix 2). The training day was divided into three parts:

1. The questionnaire

The first part of the training day included an overview of the questionnaire and an introduction to the psychosocial elements used in the questionnaire.

2. Assessment of management complexity

The second part focused on the Weighted Case Mix Tool (WCMT)[23] as a measure of patient management complexity.

3. Standardisation of dental examiners

The training ensured that there was standardisation of the clinical data which included assessment of oral mucosal lesions, obvious decay experience and plaque scores. The standardisation of the assessment of dental caries and plaque coverage was achieved using clinical material from the National Dental Inspection Programme.

4.3 Procedure

A team of dental health and health professionals, all of whom had attended the training day, visited the variety of locations involved in the study (Table 4). Homeless people were given an information sheet and consent form. All participants were required to provide informed and written consent prior to taking part. The participants were then requested to complete the questionnaire, prior to being assessed for patient management complexity and oral health status.

4.4 The questionnaire

The questionnaire (Appendix 1) was in six parts and consisted of:

i. Demographic profile of the participants

The first part of the questionnaire asked about the participants' demographic profile. This included age and gender, current and past living status, family status, previous occupation and reason for homelessness.

ii. Health and health behaviours

This section examined the participants' medical history including prescribed medication and health behaviours such as alcohol, tobacco and drug use.

iii. Dental anxiety status: the Modified Dental Anxiety Scale (MDAS) [24]

Dental anxiety was assessed using the Modified Dental Anxiety Scale (MDAS). The MDAS consists of five questions. It asks the participants how anxious they feel in relation to waiting for dental treatment, drilling, scale and polish and local anaesthesia. Respondents rate their dental anxiety on a five-point scale, which ranges from not anxious (1) to extremely anxious (5). Possible scores range from 5 to 25, with scores over 19 indicating dental phobia. The normative value for a general practice patient population is 10.39 and the normative value for a UK general public population is 11.6.[25]

iv. Oral health-related quality of life: the Oral Health Impact Scale-14 (OHIP-14)[26]

The OHIP-14 is a 14-item inventory which assesses oral health-related quality of life. It is based on a hierarchy of impacts arising from oral disease, ranging in severity, and includes questions on functional limitation (e.g. pronouncing words), physical pain (e.g. painful aching mouth), psychological discomfort (e.g. feeling self-conscious), physical disability (e.g. interrupted meals), psychological disability (e.g. feeling embarrassed), social disability (e.g. irritable with others) and handicap (e.g. life less satisfying).

Respondents were asked how frequently they had experienced each of the 14 impacts, such as 'painful aching in your mouth' in the previous 12 months. Responses are made on a five-point Likert scale, with scores ranging from 0 (never) to 4 (very often). Individual item scores are presented together with an overall mean total impact score across all 14 items.

v. Depression status: the Center for Epidemiological Studies Depression Scale (CES-D)[27]

Depression was measured using the valid and reliable CES-D. The CES-D is a self-reported scale consisting of twenty items reflecting dimensions of depression, such as depressed mood, feelings of hopelessness and interactions with others. The questions are answered on a four-point Likert scale and the respondents are asked to rate their experience of each item in the previous week, the responses ranged from rarely or none of the time (scoring 0) to most or all of the time (scoring 3). Four of the twenty items (e.g. I feel happy) are scored positively i.e. the responses ranged from 3 (rarely or none of the time) to 0 (most or all of the time). Total scores range from 0 to 60, with scores of 16 or over indicating depressed mood. In a survey of people residing in north London the prevalence of depression as assessed by the CES-D was 38.9%. [28]

vi. Dental experiences and dental health attitudes

The final part recorded the reason for last attending the dentist (e.g. check-up or trouble with teeth) and previous dental treatment experiences (e.g. fillings and extractions). Opinions about going to the dentist were also assessed in this section, using measures from the Adult Dental Health Survey 1998,[5] where responses to nine statements related to going to the dentist are made on a four-point scale, ranging from 'definitely feel like that' to 'don't feel like that'.

All the scores for the nine dental access attitudinal items were subjected to a principal components factor analysis – a method to cluster items together to form a consistent scale. In Table 4 the various individual items and scales are presented with their dental treatment attitudinal access labels together with their Cronbach's alpha as a measure of the reliability of the scale (internal consistency).

Two scales were found which explained 41.50% of the variance. Scale 1 was composed of items 1-6 and had an eigenvalue of 2.65. It explained 21.15% of the variance. Scale 2, with an eigenvalue of 1.07, was composed of remaining items. Scale 2 explained a further 20.35% of the variance.

The items in the two scales seemed to describe different attitudinal aspects of reduced access to dental treatment. Scale 1 was, therefore, conceptualised as ‘access inhibition’; Scale 2 was conceptualised as ‘access anxiety’.

4.5 Administration of the questionnaire

Following piloting, participants were asked to complete the questionnaire prior to the oral examination. Many of those surveyed required help with completing the questionnaire due to poor eyesight and/or poor literacy skills.

4.6 Assessment of patient management complexity

The British Dental Association’s (BDA) Weighted Case Mix Tool (WCMT) was developed as part of a ‘tool kit’ for the commissioning of special care dentistry in the Primary Care Trusts in England by Bateman et al [23]. The WCMT identifies six criteria that solely or in combination indicate a measurable level of patient complexity (Table 5). Each criteria is measured on a four point scale where 0 represents an average individual or standard patient and A, B and C demonstrate increasing levels of management complexity.

Table 4: Dental treatment access attitudinal scales and attitude items

Attitudinal Item		Cronbach’s alpha	Factor loading	Mean (95%CI)
	Scale 1: access inhibition	0.6		14.65 (14.35, 14.94)
AI 1	I’d like to know more about what the dentist is going to do and why		0.70	2.68 (2.59, 2.77)
AI 2	Dental receptionists not very helpful or welcoming		0.62	1.84 (1.76, 1.92)
AI 3	I find NHS treatment difficult to find		0.52	2.51 (2.42, 2.61)
AI 4	Going to the dentist is like being processed on a conveyer belt		0.50	2.02 (1.94, 2.10)
AI 5	I’d like to be able to drop in at the dentist without an appointment		0.48	3.26 (3.18, 3.34)
AI 6	I don’t want intricate dental treatment		0.39	2.34 (2.25, 2.43)
	Scale 2: access anxiety	0.6		7.06 (6.86, 7.25)
AA 1	If I had toothache I’d rather take painkillers than go to the dentist		0.78	2.65 (2.56, 2.74)
AA 2	The worst part of going to the dentist is waiting for treatment		0.76	2.52 (2.43, 2.61)
AA 3	I don’t like lying flat in the dental chair		0.49	1.89 (1.80, 1.97)

Although there is a level of subjectivity in assessing the scores, the tool is supported with a best guide model to aid appropriate scoring. Each score is 'assigned weightings based upon a group of experienced clinicians' in the BDA development group. A weighted total score is calculated from the sum of the six individual criteria. The total weighted case-mix score is allocated into a series of banded scores reflecting the degree of patient management complexity as shown in Table 6.

Weighted case mix scores were entered under each of the six categories as per the WCMT BDA good practice guidelines: patients were scored 0, A, B or C as appropriate. If for any reason the clinical examiners were unable to complete a section of the form, were unclear about what score to allocate in the WCMT or felt that the relative complexity of a case warranted a WCMT score other than that proposed in the guidance, then a comments section at the foot of the page allowed variance recording (Appendix 1).

Table 5: WCMT assigned weightings for criteria

	0	A	B	C
Ability to communicate e.g. English not first language	0	2	4	8
Ability to cooperate e.g. severe dental anxiety, requires treatment under medication	0	3	6	12
Medical status e.g. IVDU	0	2	6	12
Oral risk factors e.g. OH compromised	0	3	6	12
Access to oral care e.g. non-attendance due to chaotic lifestyle	0	2	4	8
Legal and ethical barriers to care e.g. incapacity certificate required	0	2	4	8

Table 6: WCMT banded total score

0	Standard patient
1-9	Some complexity
10-19	Moderate complexity
20-29	Severe complexity
30+	Extreme complexity

4.7 Oral health examination

i. Obvious Decay Experience Assessment

Obvious decay experience (D_3 MFT) was assessed using the criteria and guidelines in accordance with the Basic Inspection from the National Dental Inspection Programme. The dental status was recorded as obvious decay experience (D_3 MFT) which recognised visual dentine caries (D_3) or 'decay that can be seen to go into the dentine'. Obvious decay experience is the total D_3 MFT which is a sum of the decayed (D_3), missing (M) and filled (F) teeth.

ii. Periodontal Health Assessment : Simplified Oral Hygiene Index

Plaque scores were assessed on six teeth, if present. A score per index tooth was allocated according to the Simplified Oral Hygiene Index (OHI-S) scale of debris present (Figure 2). The plaque index score for an individual is obtained by adding the plaque scores per tooth and dividing by the number of teeth examined[29-31]

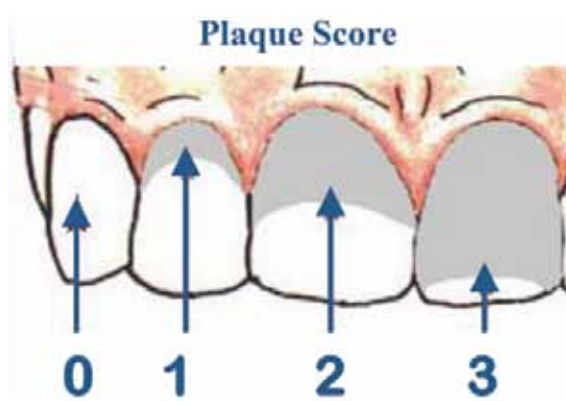


Figure 2: The Simplified Oral Hygiene Index

- 0 = No debris or stain present
- 1 = Soft debris covering not more than 1/3 of the tooth surface, or presence of extrinsic stains without other debris regardless of surface area covered.
- 2 = Soft debris covering more than 1/3, but not more than two thirds, of exposed tooth surface.
- 3 = Soft debris covering more than two thirds of exposed tooth surface.

iii. Oral Mucosa

Oral mucosa is the primary protective mucous membrane that lines the cavity of the mouth, including the gums. It covers six areas of the oral cavity: lips, buccal mucosa (cheeks), tongue, floor of the mouth, palate and fauces (throat). A score was allocated per intra-oral mucosal site recording: lesion absent, lesion present (monitor) or lesion present (refer).

iv. Denture Assessment

The presence of complete (upper and lower) and partial (upper and lower) dentures was recorded. All dentures were examined for stability, retention and occlusion to provide an assessment of overall clinical satisfaction.

v. Comments area

A separate comments area was also provided to allow any comments to be noted.

4.8 Statistical analysis

The data was coded and entered into a computer using the statistical package SPSS v17. The data was subjected to frequency distributions, Chi-squared analysis, t-tests and one way Analysis of Variance (ANOVA) and the post hoc Scheffe test to determine statistical differences between groups (for further information see Glossary of Terms).

4.9 Ethical considerations

The National Research Ethics Service was contacted in March 2008 concerning the requirement for ethical approval. In April 2008 the Integrated Research Application System (IRAS) responded to state that ethical approval from an NHS Research Ethics Committee was not required as the study was categorized as a service evaluation (Appendix 6). Each of the individual NHS Boards were informed and asked to liaise with their relevant local NHS organisation to ensure their awareness of the IRAS statement.

Ethical approval was obtained from the University of Dundee Research Ethics Committee (UREC 9005) for the qualitative aspect (Appendix 6). Information sheets detailing each aspect of the survey together with written consent forms were provided to each participant (Appendix 7). Informed consent was sought from each of the participants prior to taking part in the needs assessment. Data were anonymised.



Smile4life Survey Findings

5.0 SMILE4LIFE SURVEY FINDINGS

5.1 Sample

A total of 853 homeless people took part in the survey. The participants were sampled in a variety of hostels, rough sleeper drop-in centres, night shelters, women's refuges, soup kitchens, and dedicated medical and dental surgeries for homeless people across the seven NHS Boards (Table 7) during the nine-month period.

The largest group of participants was collected in NHS Greater Glasgow & Clyde, making up 25% of the sample, and the lowest proportion, making up 8% of the sample, was from NHS Highland (Figure 3).

Fifteen percent of the participants in the sample did not consent to the oral examination. Of these non-compliers, 44% were from NHS Greater Glasgow & Clyde, 18% from NHS Lothian and 12% from NHS Highland. Sixty percent of those participants who refused the oral health examination were aged between 25 and 44 years (Table 8). The valid response rate was 80%.

Figure 3: Number of participants by NHS Board

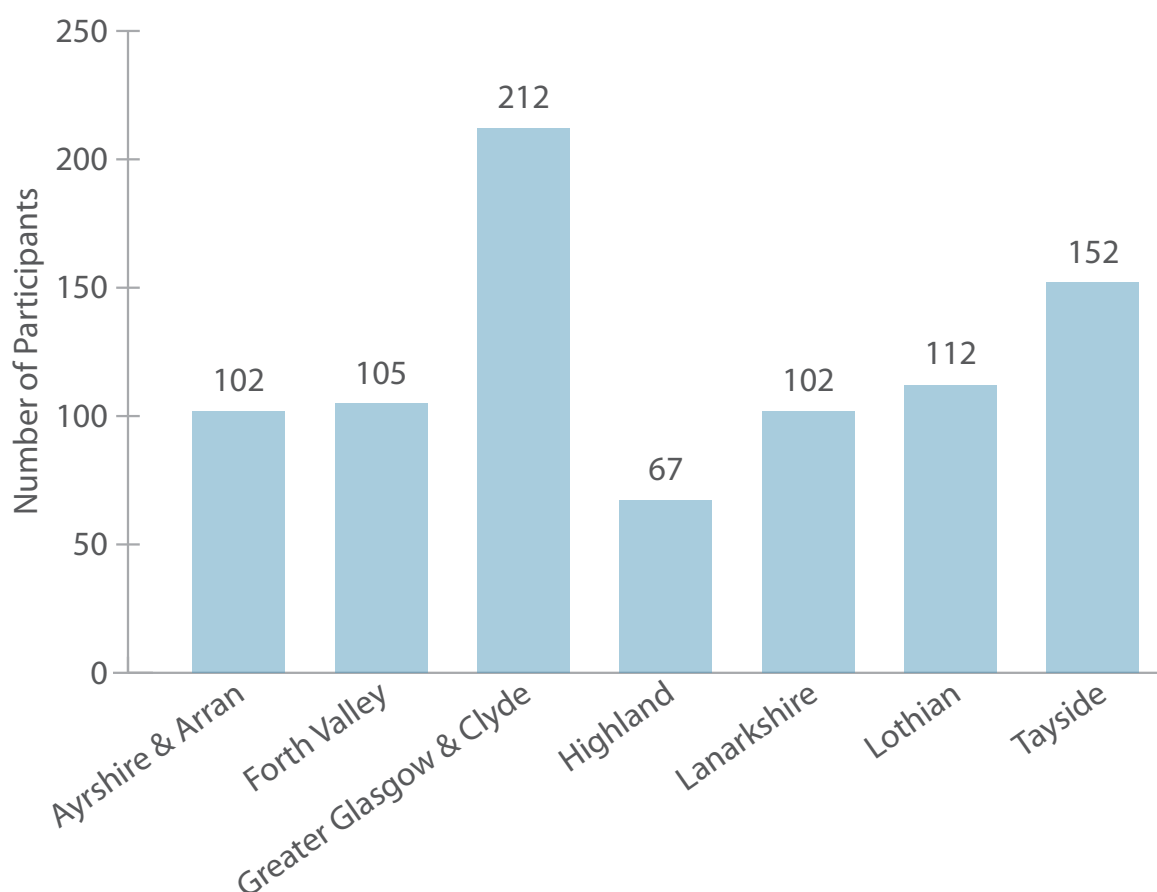


Table 7: Details of data collection by participating NHS Board

	NHS Ayrshire & Arran	NHS Forth Valley	NHS Greater Glasgow & Clyde	NHS Highland	NHS Lanarkshire	NHS Lothian	NHS Tayside
Days/times	Daytime only	Daytime only	Daytime and occasional evenings	Daytime only	Wednesdays 6-9pm	Daytime and occasional evenings	Daytime only
Frequency	1 session a week	1 session per week	1 session per week	1 session per week	Once a week (visits to 2 establishments per night in one area)	2 sessions per week	1 session per week
Staff	1 dentist, 1 dental nurse, public health nurse administering questionnaire. Member of OHP Team to do opportunistic advice	1 dentist and 1 dental nurse	1 dentist and 1 dental nurse	1 dentist, 1 dental nurse and an oral health coordinator	Team of 3: dentist, dental nurse and administrator. Survey team consists of 4 dentists, 4 dental nurses and 1 senior HPO, working on a rota	2 dentists and 2 dental nurses	1 dentist, 1 dental nurse, 1 hygienist and/or public health nurse from homelessness health team
Venues	Mainly hostels (may take place in drop-in centre occasionally)	Hostels and the Salvation Army Drop-in Centre	Partick Dental Clinic for Homeless People, Hunter Street Homeless Health Centre, indoor soup kitchen	Hostels, residential units, day centre, women's refuge, homeless van, plus the homeless service	Hostels and soup kitchens	Cowgate Clinic, day centres, hostels, night shelter	Hostels, day rooms

5.2 Demographic Profile

Demographic profile: age

The mean age of the sample was 33.90 years (95%CI: 33.08, 34.73). The age ranged from 16 to 78 years with the median age being 32.50 years. Twenty-eight percent (229) were aged 16-24 years of age, 28% (233) were aged 25-34 and 24% (197) were aged 35-44. The remainder of the sample (21%) were 45 years and over. Significant differences in mean age were explained by the grouping variable 'NHS Board' ($F[6,825]=15.544$; $P<0.001$). This meant that those participants in NHS Ayrshire & Arran and NHS Forth Valley were significantly younger than those participating in the other NHS Boards except NHS Lanarkshire (Table 9).

Demographic profile: gender

Seventy-four percent (634) of the sample were male with the largest proportions being in NHS Forth Valley (85%) and NHS Lothian (83%) (Figure 4). The mean age of the women was 30.00 years (95%CI: 28.57, 31.46) and for men was 35.21 years (95%CI: 34.24, 36.19). Women compared with men across all NHS Boards were younger ($F[6,814]=2.75$; $P=0.01$) (Table 10).

Table 8: Comparison of compliers and non-compliers with the oral health examination, by NHS Board

NHS Board	Dental Examination		
	Number of compliers	Number of non-compliers	Total
Ayrshire & Arran	102	0	102
Forth Valley	100	5	105
Greater Glasgow & Clyde	118	94	212
Highland	59	8	67
Lanarkshire	102	0	102
Lothian	92	20	112
Tayside	153	0	153
Total	726	127	853

Table 9: Demographic profile: age by NHS Board

NHS Board	Ayrshire & Arran	Forth Valley	Greater Glasgow & Clyde	Highland	Lanarkshire	Lothian	Tayside
Mean	29.71 ^{1*}	26.64 ¹	37.22 ³	37.66 ³	30.99 ^{1,2}	35.64 ^{2,3}	36.27 ^{2,3}
(95% CI)	(27.60, 31.82)	(24.64, 28.64)	(35.65, 38.79)	(34.56, 40.75)	(28.57, 33.41)	(33.58, 37.70)	34.23, 38.31)

*The suffixes show the significant differences in age which exist between the participants by NHS Board

Figure 4: Demographic profile: gender by NHS Board.

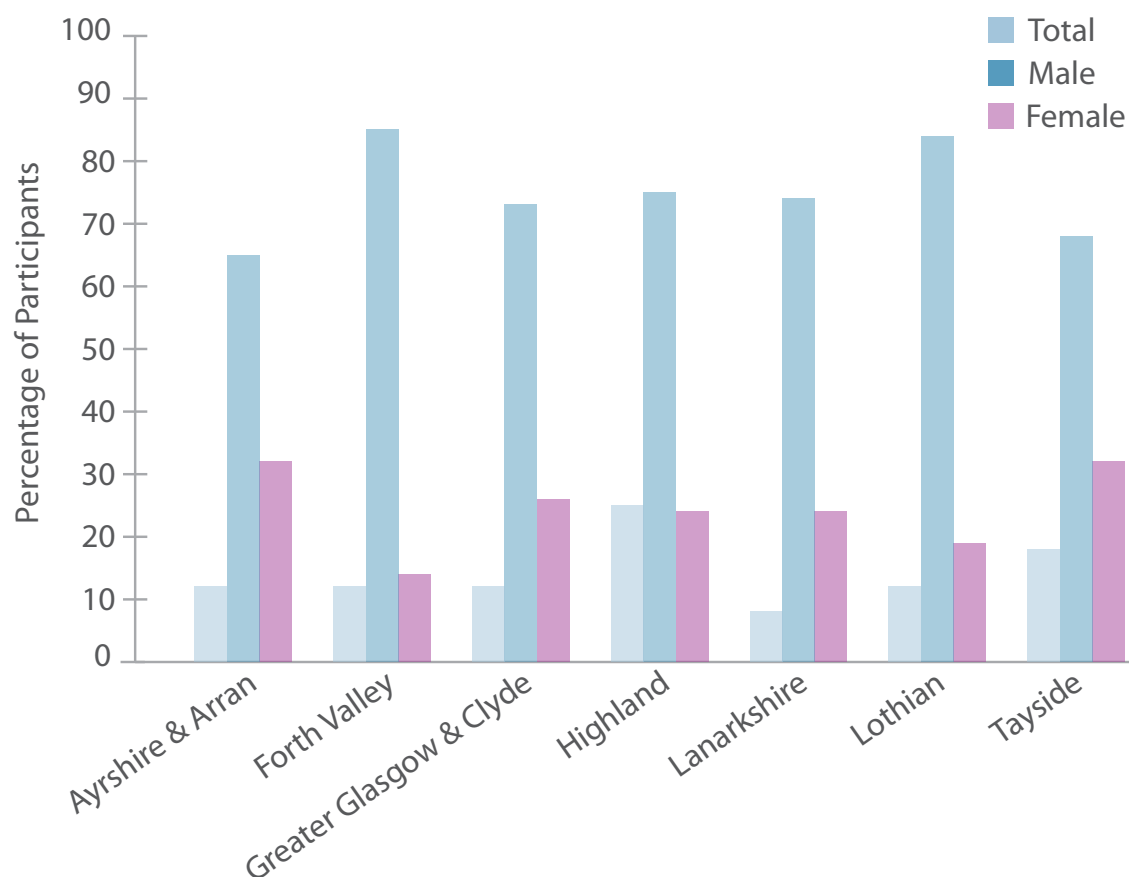


Table 10: Demographic profile: by age, gender and NHS Board

NHS Board	Gender	Mean Age (yrs)	95% CI	
Ayrshire & Arran	male	31.07	28.38	33.76
	female	27.02	23.25	30.80
Forth Valley	male	26.03	23.67	28.39
	female	29.93	24.43	35.44
Greater Glasgow & Clyde	male	38.61	36.79	40.42
	female	33.50	30.59	36.42
Highland	male	40.44	37.30	43.59
	female	28.53	22.84	34.22
Lanarkshire	male	33.34	30.81	35.86
	female	24.11	19.79	28.43
Lothian	male	36.90	34.53	39.28
	female	29.23	23.89	34.57
Tayside	male	38.28	36.11	40.45
	female	31.95	28.77	35.13

Demographic profile: occupation

Occupations or previous occupations provided by the homeless people in the survey were reclassified in accordance to The Standard Occupational Classification 2000 (SOC 2000).[32] There are nine major groups in the Standard Occupational Classification. Eight more occupational categories were added to describe those not included in the Standard Occupational Classification list (Table 11).

Forty-five percent of the homeless people in the survey did not provide occupation or previous occupation information; therefore it was assumed that they were economically inactive. Of those that did provide information, large percentages either worked or had worked in skilled trades (25%) and unskilled occupations (21.6%).

Table 11: Stated occupations of participants		
Stated occupation	Frequency	Percentage
Managers & Senior Officials	8	1.7
Professional Occupations	8	1.7
Associate Professional & Technical Occupations	20	4.3
Administrative and Secretarial Occupations	9	1.9
Skilled Trades Occupations	117	25.0
Personal Service Occupations	14	3.0
Sales & Customer Service Occupations	20	4.3
Process, Plant & Machine Operatives	39	8.3
Unskilled Occupations	101	21.6
Unemployed	83	17.7
In Education	13	2.8
Homemaker	6	1.3
Sick/Disabled	8	1.7
Ex-Armed Forces	9	1.9
Ex-prisoner	1	0.2
Occupation not stated or inadequately described	10	2.1
Not classifiable for other reasons	2	0.4
Total	468	100.0

Demographic profile: family status

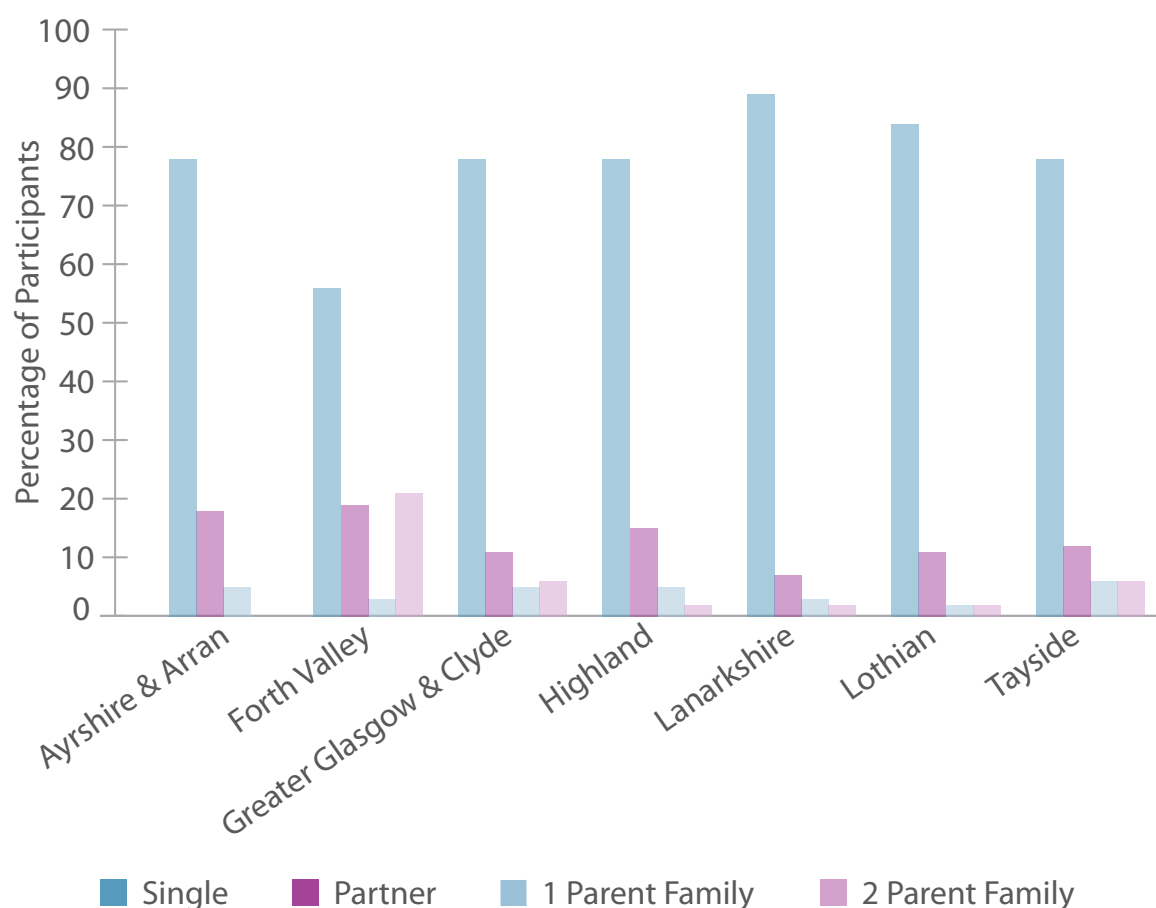
Seventy-seven percent (622) of the sample stated that they were single. A further 12% (103) stated that they lived with a partner. Ten percent of the participants described themselves as living in one-parent (33) or two-parent (47) families. One hundred and five participants stated that they had children of which 44% (46) had one child, 30% (31) had two children, 12% (13) had three children and 14% (15) had four or more children.

Eighty percent (87) of the 105 participants with children were aged between 16 and 44 years of age. Significantly larger proportions of 16-24 year-olds (42%) were living with a partner and significantly

larger proportions of those aged 55+ (85%) were single ($X^2[12]=34.17:P=0.001$). Significantly larger proportions of women (21%) compared with men (6%) lived in families with their children [$X^2[3]=87.28:P<0.001$].

Figure 5 shows the family status of participants by NHS Board. Participants from NHS Forth Valley were different from other NHS Boards with significantly larger proportions living in two-parent families ($X^2[18]=73.97: P<0.001$). The majority of participants with children resided in NHS Forth Valley (28%), NHS Greater Glasgow & Clyde (21%) and in NHS Tayside (26%).

Figure 5: Comparison of family status by NHS Board



Demographic profile: living arrangements

A total of 694 people (81%) gave information on their current living arrangements. Of the remaining 159 participants, 83 people did not give a response and 76 people ticked more than one box. Table 12 summarises the current living arrangements of the sample. The largest proportions of homeless people resided in specific accommodation for homeless people, including hostels (31%) and temporary accommodation (20%). Only 2% stated that they were sleeping rough. Nine percent of people stated that they had been released from prison.

Demographic profile: ethnicity

Over 90% (779) of the sample was Caucasian, with smaller numbers of people stating they were African/Caribbean (15), asylum seekers (7), Gypsy/Travellers (3), Asian (2) or Chinese (1).

Table 12: Living arrangements			
Roofless		Number	Percentage
Living rough	Public/external space	17	2
Emergency accommodation	Night shelter	8	1
Houseless		Number	Percentage
Accommodation for the homeless	Hostel	267	31
	Temporary accommodation (short stay)	174	20
	Transitional supported accommodation (longer stay)	59	7
Other accommodation	Women's shelter	18	2
	Sofa surfer	25	3
Accommodation for immigrants	Temporary accommodation/reception centre	8	1
Released from institutions	Prison/Young Offenders Institution	82	9
	Hospital	3	0.4
	Children's institutions/homes	1	0.1
Receiving longer-term support due to homelessness	Residential care for older homeless people	2	0.2
	Supported accommodation for formerly homeless people	30	4

5.3 HEALTH AND HEALTH BEHAVIOURS

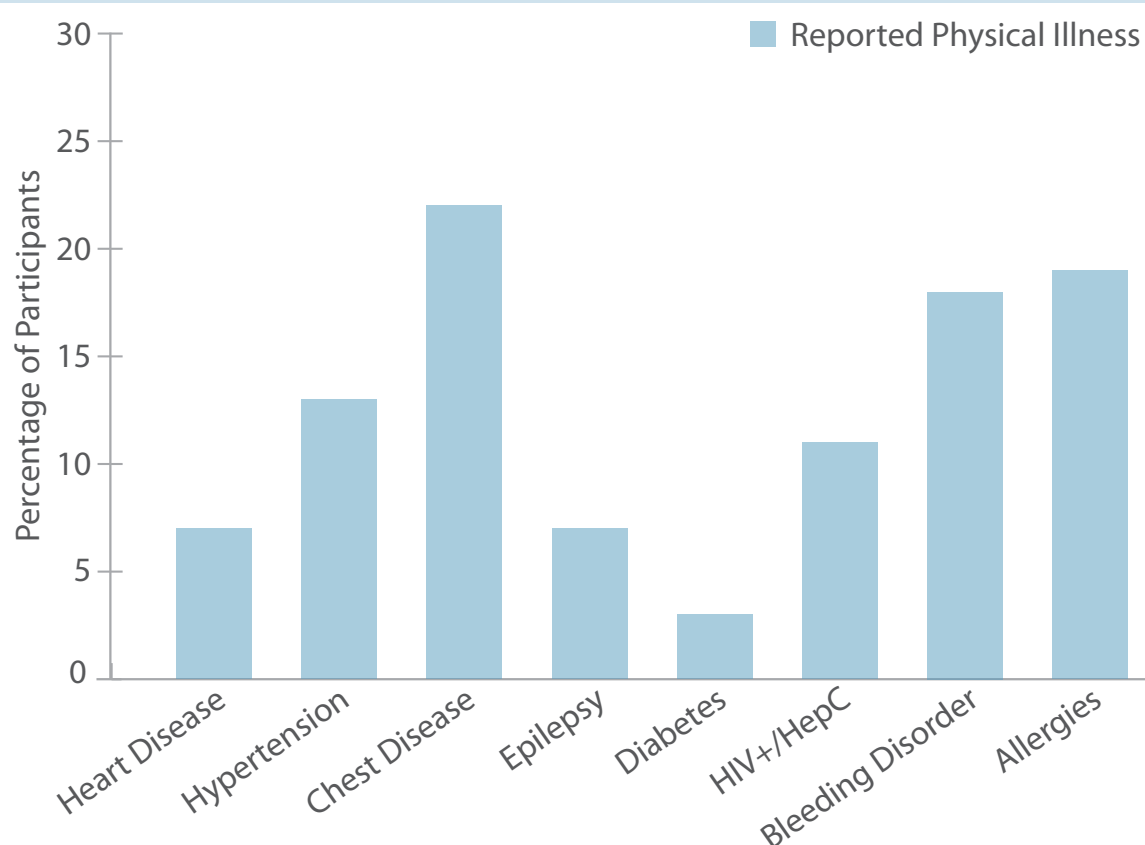
Health and health behaviours: physical health

Of the total, 54% (460) reported that they were receiving medical treatment from their general medical practitioner and/or from specialists either in primary (clinic-based) or secondary (hospital-based) care. Almost a quarter of those surveyed (22%) reported having chest diseases (including asthma), and 18% reported that they bruised/bled easily. Other physical illnesses included hypertension (13%), epilepsy (7%), heart disease (7%) and diabetes (3%). Eleven percent of respondents stated that they were HIV-positive or Hepatitis C-positive (11%) (Figure 6).

Physical health: comparison by age group

Reported physical illness was significantly associated with age. Significantly larger proportions of participants aged 55 years or over compared with other age groups reported that they had heart disease (21%) ($X^2[4]=38.89:P<0.001$), hypertension (38%) ($X^2[4]=58.26:P<0.001$), or epilepsy (13%) ($X^2[4]=12.23:P<0.02$). Greater proportions of participants in the 25-34 year-old age group (38%) and in the 35-44 year-old age group (40%) were HIV and/or Hepatitis C positive compared with other age groups ($X^2[4]=29.77:P<0.001$).

Figure 6: Prevalence of reported physical illness



Physical health: comparison by gender

Gender was also significantly related to reported physical illness. Larger proportions of women compared with men stated that they had chest disease ($X^2[1]=9.06:P=0.003$), bleeding disorder ($X^2[1]=31.64:P<0.001$) and suffered from allergies ($X^2[1]=7.40:P=0.007$) (Figure 7).

Physical health: comparisons by NHS Board

Proportions of reported experience of heart disease ($X^2[6]=16.48:P=0.01$), diabetes ($X^2[6]=15.87:P=0.01$), HIV and/or Hepatitis C positive ($X^2[6]=16.69:P=0.005$) and bleeding disorder ($X^2[6]=12.97:P=0.04$) significantly varied across NHS Boards (Figure 8).

Figure 7: Comparison of reported physical illness by gender

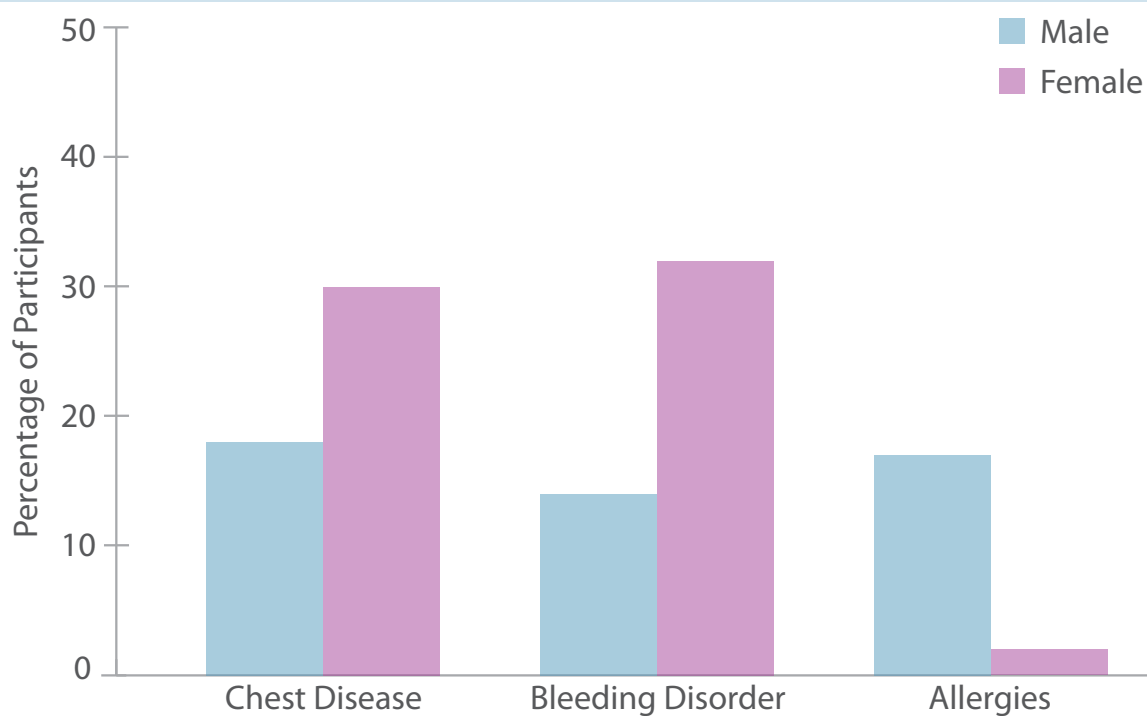
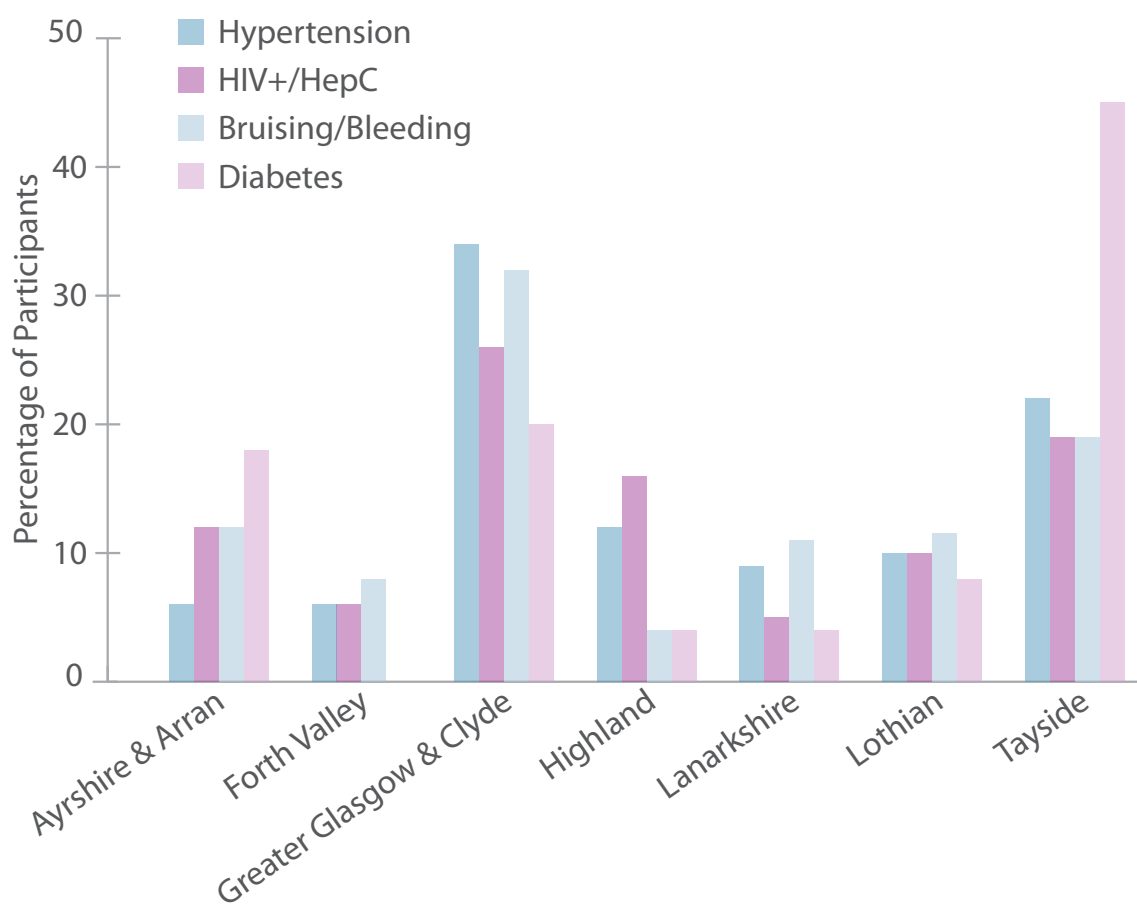


Figure 8: Comparison of reported physical illness by NHS Board





Health and health behaviours: prescribed drugs

Sixty-three percent of the sample (496 people) stated that they were taking prescribed medication. A total of 472 participants stated the type of medication they were currently taking (Table 13). The largest proportions of prescribed medication were anti-depressants, methadone, anxiolytics (tranquilizers) and anti-psychotic medication. For the entire sample (853) this meant that 35% of the prescribed medication was for mental ill-health.

Health and health behaviours: tobacco use

The majority of the sample (85%) reported being smokers. The median number of cigarettes smoked daily was 20. The number of cigarettes smoked daily increased with age ($F[4,646]=2.78; P=0.03$) with younger participants smoking on average fewer cigarettes compared with those in older age groups (Table 14).

The median number of cigarettes smoked daily by male participants was 20 compared with women who reported smoking a median number of 15 cigarettes per day. When the proportion of men and women smoking by age group was examined, larger proportions of men across all age groups compared with women stated that they smoked on a daily basis (Figure 9).

Table 13: Prescribed medication

Medication	Number of patients taking prescribed medication (n=472)	Percentage of patients taking medication	Percentage of total sample (n=853)
Anti-depressants	153	32.42	17.94
Methadone	153	32.42	17.94
Chest/asthma medication	128	27.12	15.01
Anxiolytics	96	20.34	11.25
Analgesics	64	13.56	7.50
Anti-psychotics	51	10.81	5.98
Vitamins	43	9.11	5.04
GIT medication	30	6.36	3.52
Anti-epileptics	29	6.14	3.40
Anti-hypertensives	27	5.72	3.17
Anti-inflammatories	24	5.08	2.81
Antibiotics	23	4.87	2.70
Cardiac medication	15	3.18	1.76
Muscle relaxant	14	2.97	1.64

Table 14: Comparison of the average number of cigarettes reportedly smoked daily by age

Age group	16-24 yrs	25-34 yrs	35-44 yrs	45-54 yrs	55yrs+
Average number of cigarettes smoked	17.05	18.38	20.30	21.58	22.18
95%CI	15.06,19.83	16.64,20.11	18.35,22.25	18.32,24.85	17.20,27.15

Health and health behaviours: alcohol use

Thirty-one percent (254) of the participants stated that they drank alcohol at least once a day. Significantly lower proportions of those aged between 25-34 years drank alcohol compared with other age groups (Figure 10). Thirty-five percent of men compared with 19% of women stated that they drank alcohol at least once a day ($X^2[1]=18.74;P<0.001$). Across all the NHS Boards significantly larger proportions of participants (26%) in NHS Greater Glasgow & Clyde compared with the other NHS Boards stated that they drank alcohol at least daily ($X^2[6]=22.06;P=0.001$).

Health and health behaviours: drug use

A total of 564 participants (68%) stated that they had used drugs with 236 (29%) stating that they were current drug users at the time of the survey. One hundred and ninety-one participants (24%) who currently took drugs stated that they were injecting drug users.

There was a significant association between drug use and age, with significantly lower proportions of participants in the 55+ age group having ever used drugs ($X^2[4]=121.60;P<0.001$), currently using drugs ($X^2[4]=37.12;P<0.001$) or being injecting drug users ($X^2[4]=51.34;P<0.001$) (Figure 10). Sixty-eight percent of men (419) and 66% of women (144) admitted to using drugs in the past with equivalent proportions of men (30%) and women (26%) stated that they continued to take drugs. Twenty-three percent of men and 29% of women stated that they were injecting drug users at the time of the survey.

Drug use was related significantly to NHS Board. Larger proportions of participants in NHS Ayrshire & Arran (74%) and NHS Forth Valley (86%) compared with other NHS Boards stated they had used drugs ($X^2[6]=24.85;P<0.001$), and significantly greater proportions of participants from NHS Lothian (45%), NHS Ayrshire & Arran (37%) and NHS Highland (32%) stated they were current drug users compared with the other NHS Boards ($X^2[6]=23.10;P<0.001$). Larger proportions of participants from NHS Lothian (28%), NHS Ayrshire & Arran (31%) and NHS Greater Glasgow & Clyde (33%) admitted to being current injecting drug users compared with other NHS Boards ($X^2[6]=20.63;P=0.02$).



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Figure 9: Comparison of the proportions of smokers by age and gender

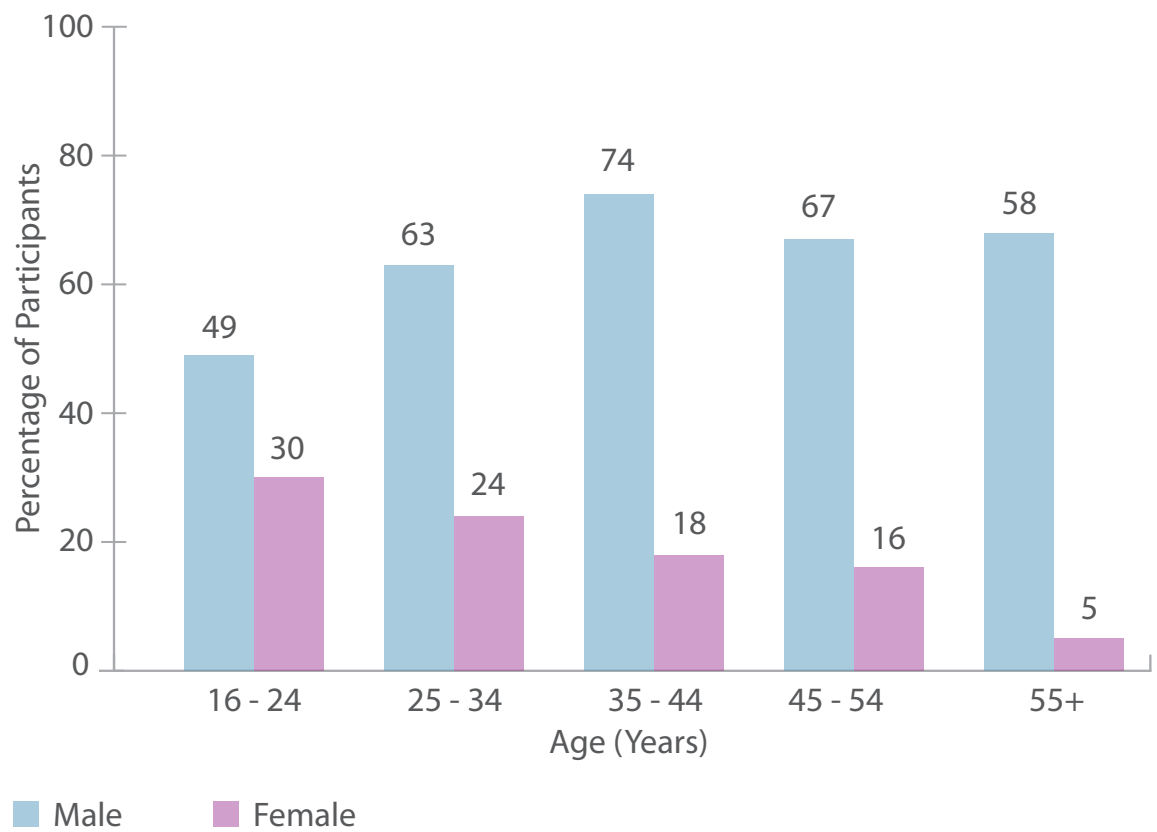
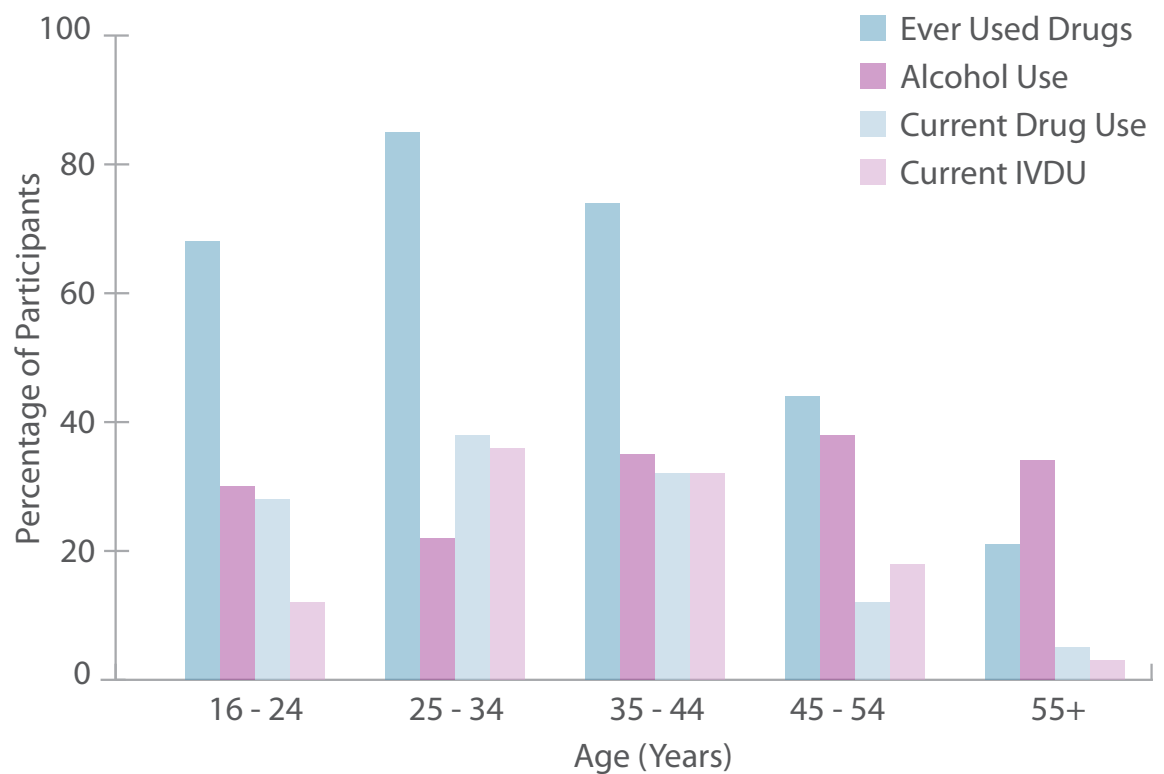


Figure 10: Comparison of alcohol and drug use by age



5.4 ORAL HEALTH AND ORAL HEALTH BEHAVIOURS

Oral health status: obvious decay experience

This section of the results presents the participants' experience of decayed teeth. This is known as obvious decay experience and is measured by total number of decayed, missing and filled teeth. The sum of the number of decayed (D_3), missing (M) and filled (F) teeth is known as the DMFT index (D_3MFT). Individual scores are averaged to give a mean score for this population. A total of 728 participants took part.

Obvious decay experience: the total sample

Table 15 shows the mean (95%CI) and median numbers of decayed, missing and filled teeth. In this sample, 27% of obvious decay experience was composed of decayed teeth (decay into dentine), 52% by missing teeth and 22% by filled teeth. This suggested that these participants had their decayed teeth extracted rather than filled.

Obvious decay experience: comparisons by age group

Significant differences in the mean number of decayed teeth ($F[4,703]=9.47:P<0.001$), missing teeth ($F[4,703]=56.94:P<0.001$) and filled teeth were explained by the grouping variable 'age group' ($F[4,703]=4.56:P=0.00$). This meant that participants aged between 25 and 44 years had significantly greater mean numbers of decayed teeth compared with the other age groups. As might be expected, people in the oldest age groups (45-54 years and 55+) had significantly greater mean numbers of extracted teeth. People in the youngest age group (16-24 years) had significantly fewer filled teeth compared those aged between 45 and 54 years (Figure 11).

Obvious decay experience: comparisons by gender

The women in the sample had a lower experience of obvious decay experience compared with the men. However the women had significantly fewer mean numbers of filled teeth, and greater mean numbers of decayed teeth compared with the male participants (Table 16).

Obvious decay experience: comparisons by NHS Board

Significant differences in the mean number of decayed teeth ($F[6,719]=6.44:P<0.001$), missing teeth ($F[6,719]=13.27:P<0.001$) and filled teeth ($F[6,719]=7.72:P<0.001$) were explained by the grouping variable 'NHS Board'. This meant that participants residing in NHS Forth Valley compared with those in NHS Highland and NHS Greater Glasgow & Clyde had significantly different mean numbers of decayed teeth and extracted teeth. Those participants in NHS Lothian, NHS Greater Glasgow & Clyde and NHS Highland had significantly greater mean numbers of restored teeth compared with those in the other NHS Boards (Figure 12).

Table 15: Obvious decay experience

Obvious decay experience	Mean (95%CI)	Median
Decayed teeth (D_3)	4.48 (4.10, 4.87)	3.00
Missing teeth (M)	8.71 (8.06, 9.36)	5.00
Filled teeth (F)	3.79 (3.50, 4.08)	2.00
D_3MFT	16.98 (16.32, 17.64)	17.00
Standing teeth	21.39 (20.75, 25.02)	24.00

Figure 11: Comparison of obvious decay experience by age group

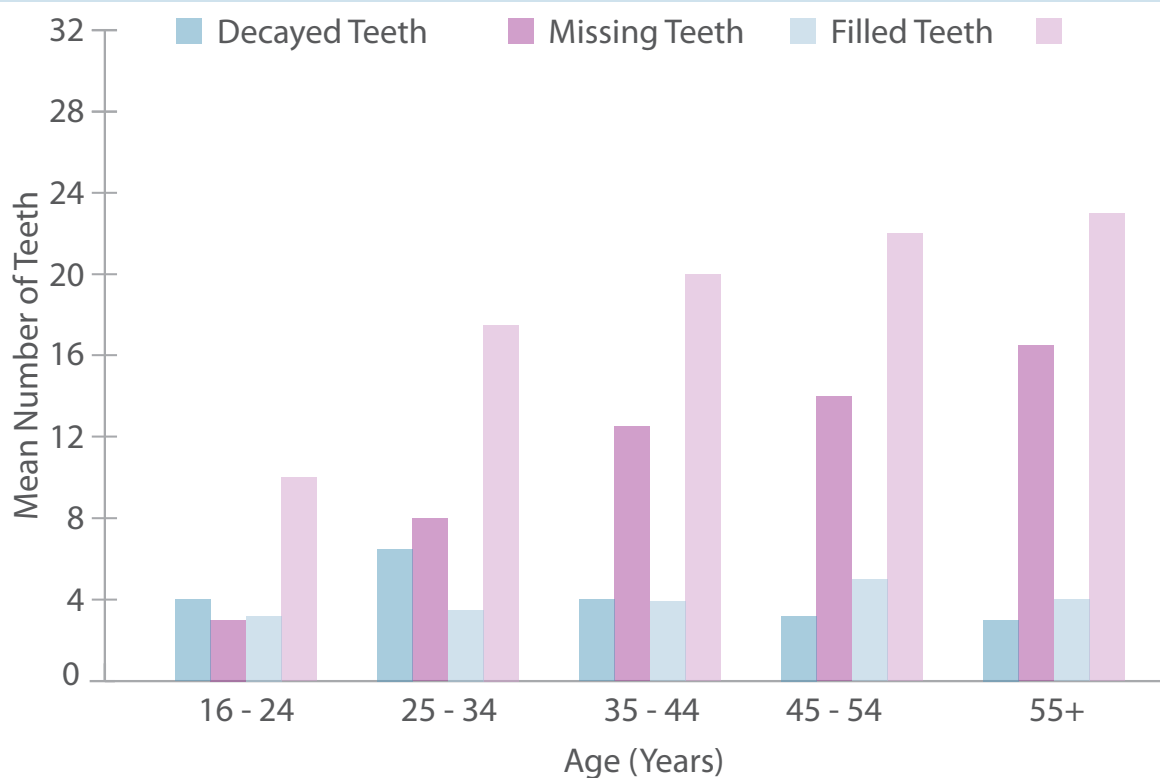


Figure 12: Comparison of obvious decay experience by NHS Board

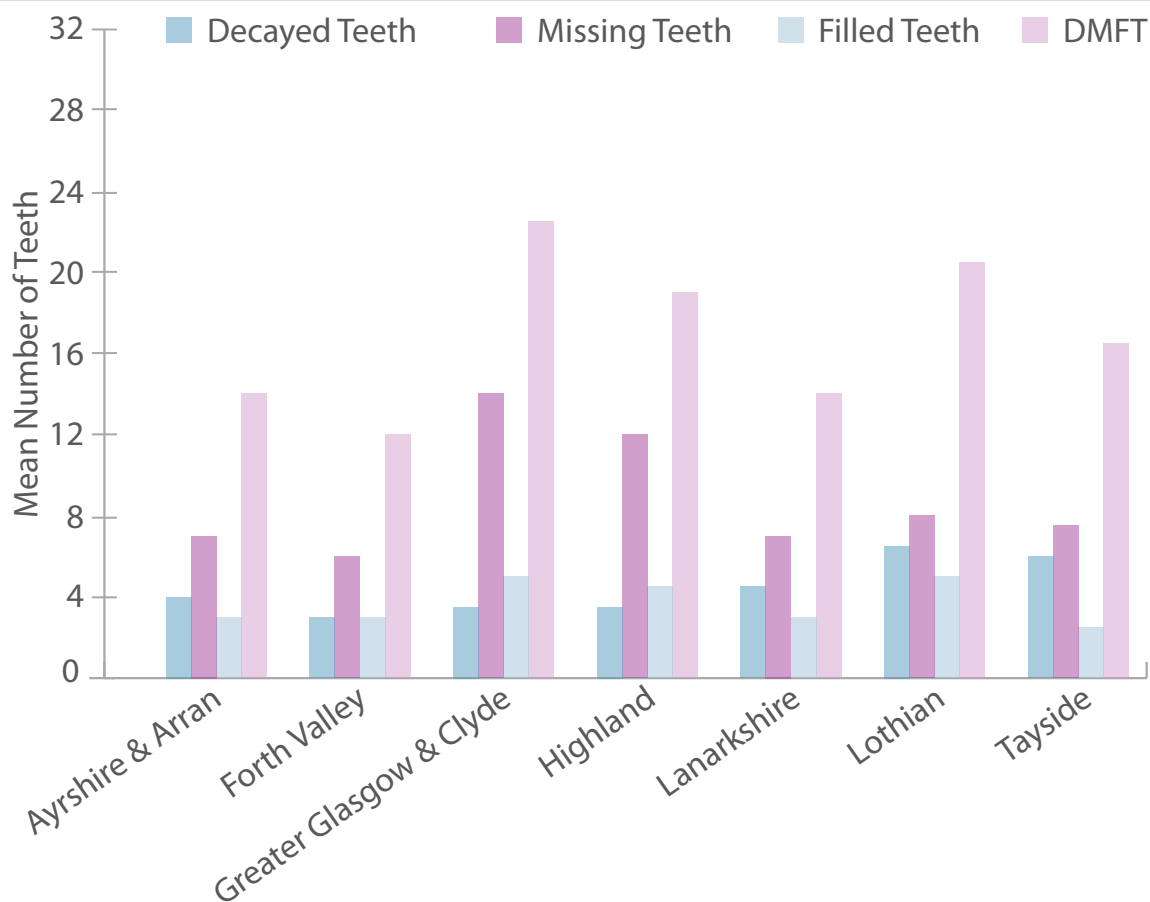


Table 16: Obvious decay experience: comparison by gender

Obvious decay experience	Gender		t	p
	Male [mean: (SD)]	Female [mean: (SD)]		
Decayed teeth (D ₃)	4.29 (4.95)	5.06 (5.89)	1.72	0.08
Missing teeth (M)	8.97 (8.89)	8.00 (8.94)	1.28	0.20
Filled teeth (F)	3.97 (4.10)	3.26 (3.65)	2.22	0.02
D ₃ MFT	17.32 (9.00)	16.32 (8.95)	1.20	0.23

Oral health status: plaque

The total mean plaque score for the sample population was 1.08 (95%CI: 1.01, 1.15). The mean plaque score for the upper teeth was 1.06 (95%CI: 0.99, 1.13) and for the lower teeth 1.10 (95% CI 1.04, 1.16). This suggested that plaque covered not more one third of the tooth surfaces examined.

Plaque: comparisons by age group, gender and NHS Board

Sixteen to twenty-four year-olds had significantly lower total mean plaque scores compared with other age groups ($F[4]=10.56; P<0.001$). There was no difference in mean plaque scores between male (1.16) and female (1.06) participants ($t=1.49; P=0.14$). Differences in plaque scores were, however, explained by the grouping variable 'NHS Board'. This meant that participants from NHS Forth Valley had the lowest mean plaque score and participants from NHS Lothian had the highest mean plaque score compared with other NHS Boards (Figure 13). Oral hygiene varied across the NHS Boards with 63% of NHS Forth Valley participants exhibiting excellent oral hygiene compared with only 8% of the NHS Lothian sample. Almost half (48%) of the NHS Lothian participants had poor oral hygiene.

Oral health status: oral mucosa

Six areas of the mouth and throat were examined. These were the lips, buccal mucosa (cheeks), tongue under the tongue (floor of mouth), palate and the throat (oropharynx). A minority of the sample had a suspicious lesion on their lips (3%), buccal mucosa (4%), tongue (1%), under their tongue (0.3%), palate (2%) and/or throat (0.2%). Nine percent (61) of the sample had one suspicious oral mucosal lesion and six participants had two suspicious lesions.

Comparison of suspicious oral mucosa lesions by age group

Participants aged between 45 and 54 years (27%) and those aged 55 and over (46%) had greater experience of suspicious lesions on the palate compared with other age groups ($X^2[4]=27.82; P<0.001$). No other differences between age groups were shown for suspicious lesions of the lips, buccal mucosa, tongue, under the tongue or throat.

Comparison of suspicious oral mucosa lesions by NHS Board

The majority of suspicious lesions were found in participants who resided in NHS Tayside. Thirty-four people from NHS Tayside had up to two suspicious mucosal lesions. This sub-sample of participants from NHS Tayside represented just over half of all of the people with lesions that required monitoring and referral. Only five participants with suspicious lesions were referred to secondary services. (Figures 14 and 15).

Figure 13: Comparison of plaque scores by NHS Board

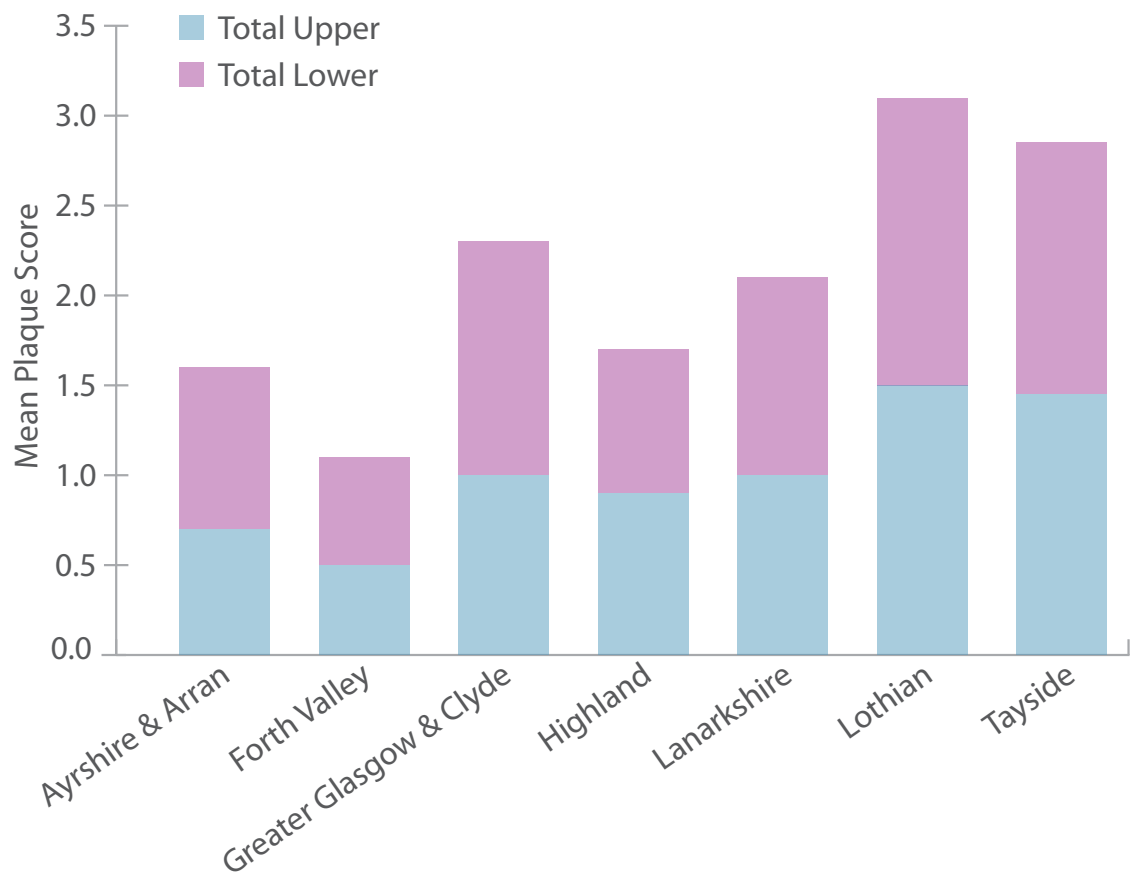


Figure 14: Comparison of suspicious oral mucosal lesions requiring monitoring by NHS Board

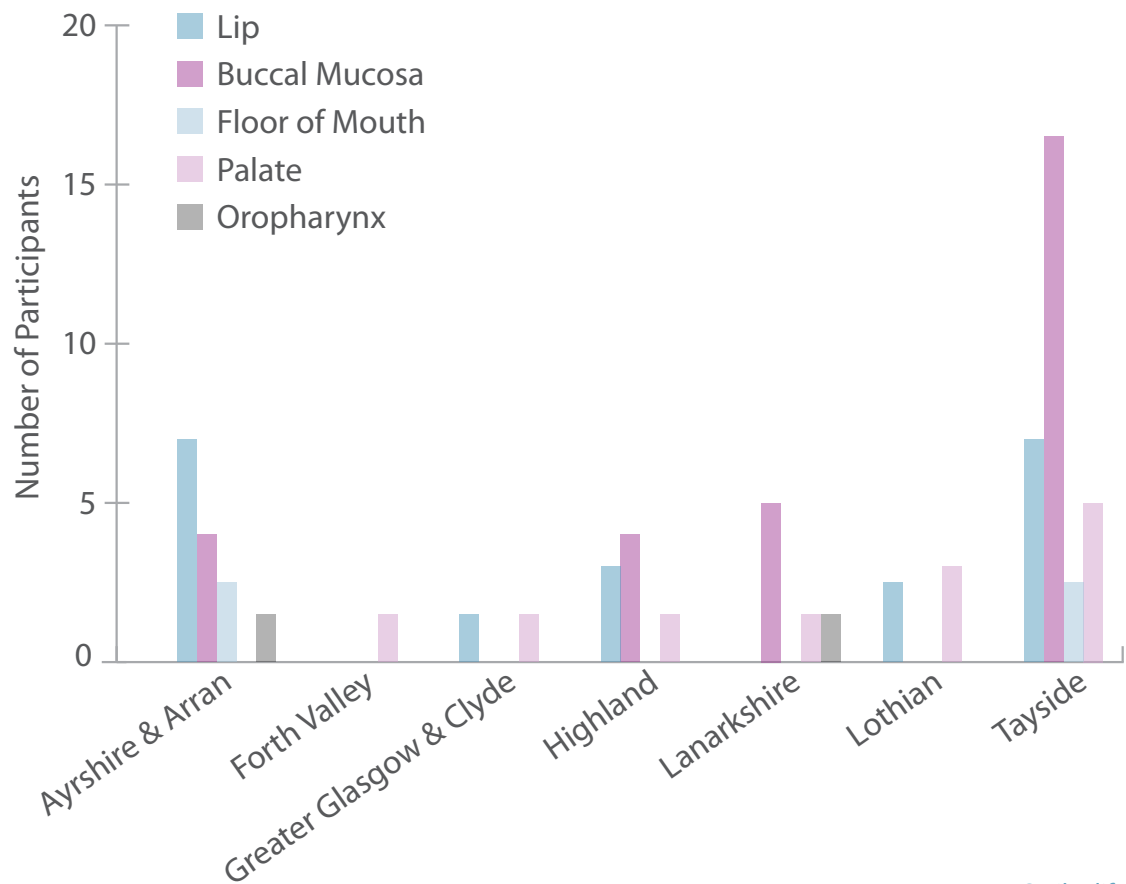
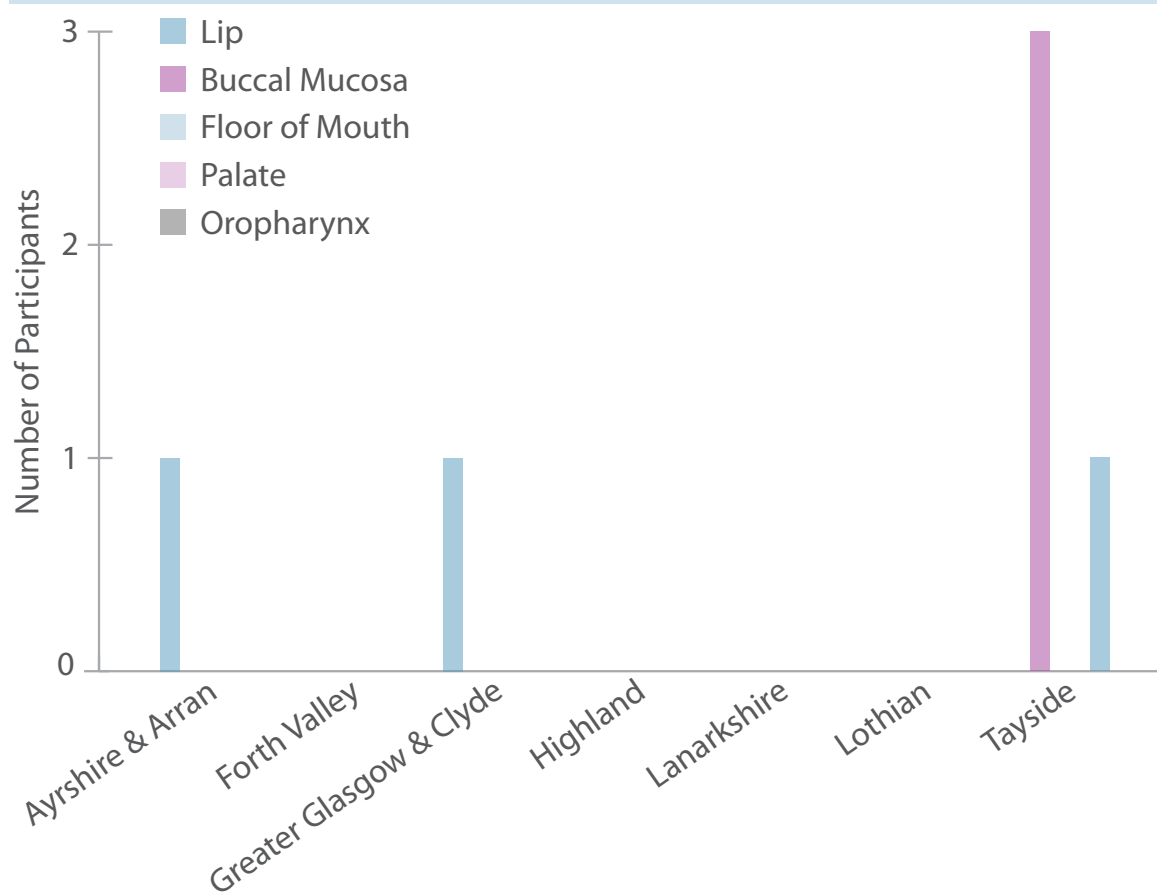


Figure 15: Comparison of suspicious oral mucosal lesions requiring referral by NHS Board



Oral health status: prevalence of edentulousness

Forty-six people had no natural teeth (i.e. were edentulous). This represented only 6% of the sample population. This low prevalence of edentulousness in this homeless population was similar to that found in homeless people in Belfast who also had a low prevalence of edentulousness, with only 8% of the Northern Ireland sample having no natural teeth.[10]

Edentulousness: comparisons by age group

The greatest proportion of participants with no natural teeth was aged between 35 and 44 years of age. Thirty-seven percent of this age group were edentulous (Figure 16).

Edentulousness: comparisons by gender

Six percent (33) of men and 7% (13) of women who took part in this survey were edentulous ($X^2[1]=0.16$; $P=0.69$).

Edentulousness: comparisons by NHS Board

The prevalence of edentulousness varied significantly across the NHS Boards ($X^2[6]=27.21$; $P<0.001$). NHS Greater Glasgow & Clyde had the largest percentage of homeless people with no natural teeth (41%) compared with other NHS Boards (Figure 17).

Figure 16: Prevalence of edentulousness and denture wearing by age

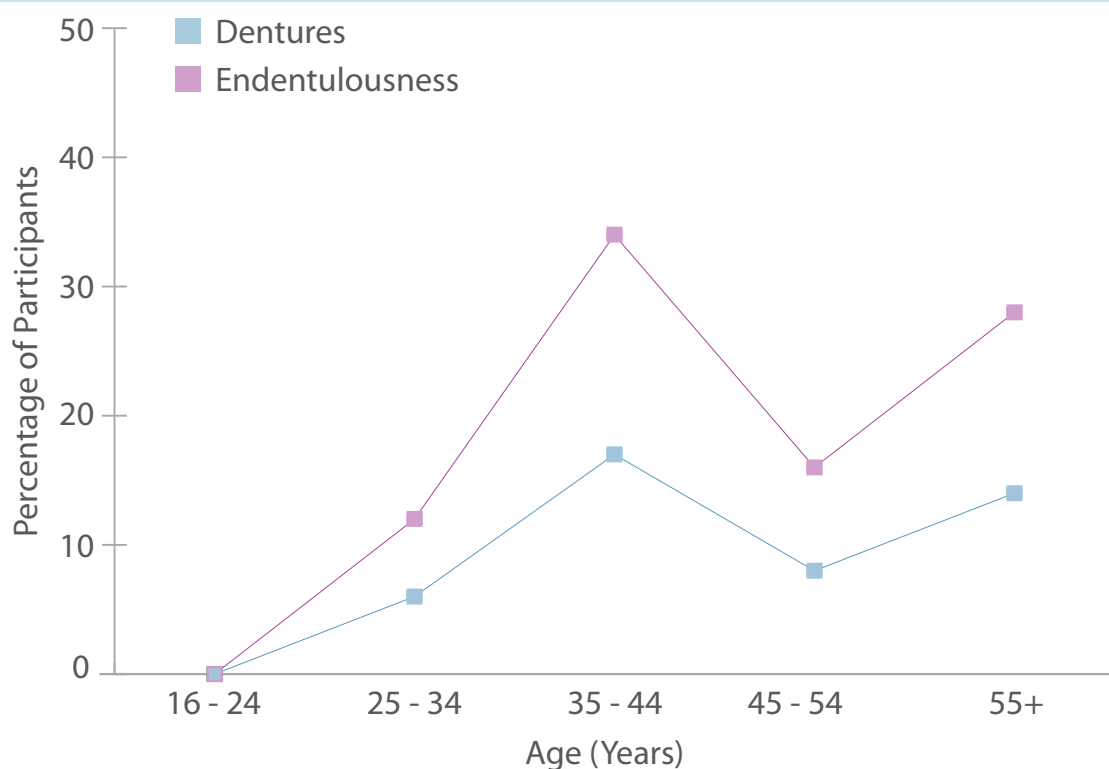
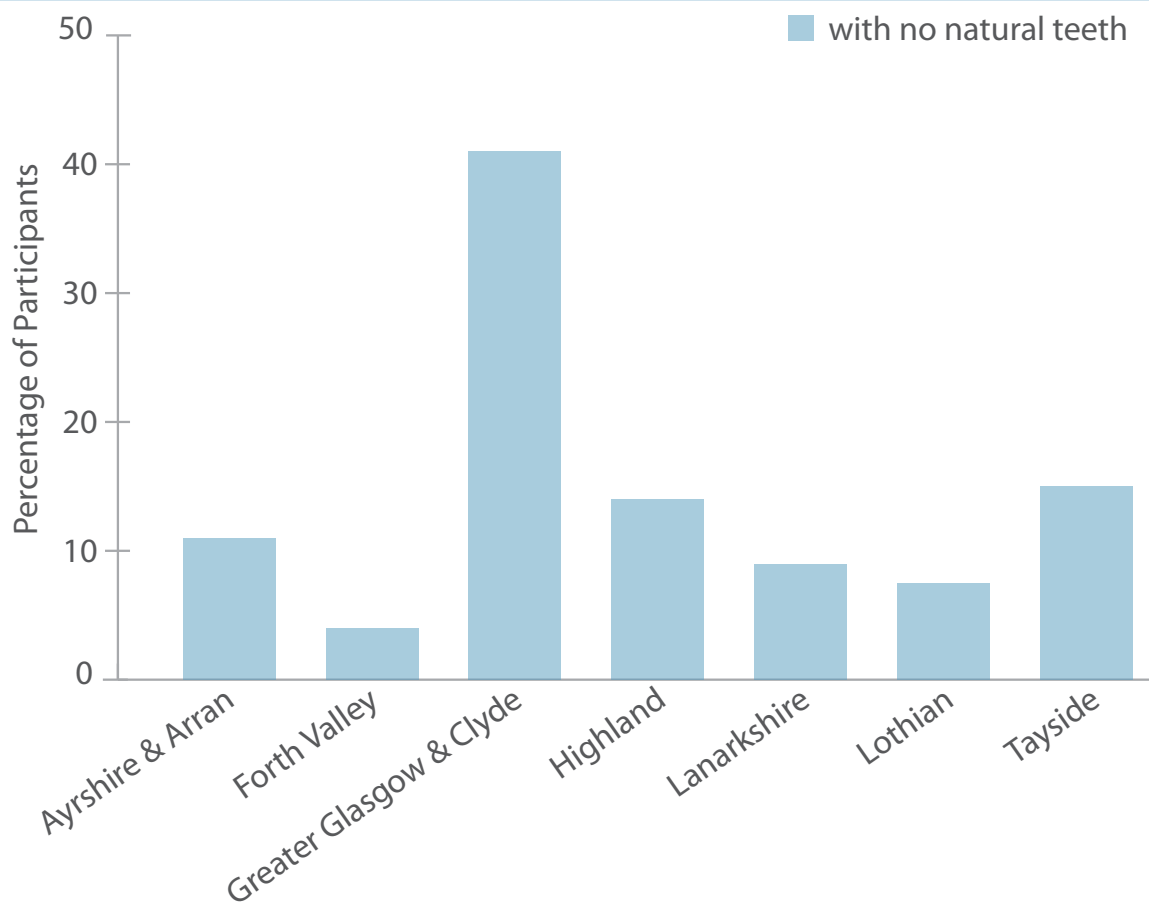


Figure 17: Comparison of edentulousness by NHS Board



Oral health status: dentures worn

A total of 139 people in the sample wore dentures (false teeth) at the time of the survey. Seventy-one of the participants wore complete upper dentures and 28 wore complete lower dentures. Seventy-one of the participants wore upper partial dentures and 18 wore partial lower dentures. Forty-four homeless people had both upper and lower full dentures and seven had upper and lower partial dentures. Four dentures (one complete upper denture and three partial lower dentures) were lost.

Comparisons of denture wear by age group

Of the 139 people who wore partial and complete upper dentures at the time of the survey, the largest proportion (32%) was aged between 35 and 44 years of age. Larger percentages of participants aged 45-54 wore partial lower dentures (44%) whereas larger proportions of participants aged 55 years and over (36%) wore complete lower dentures (Figure 16).

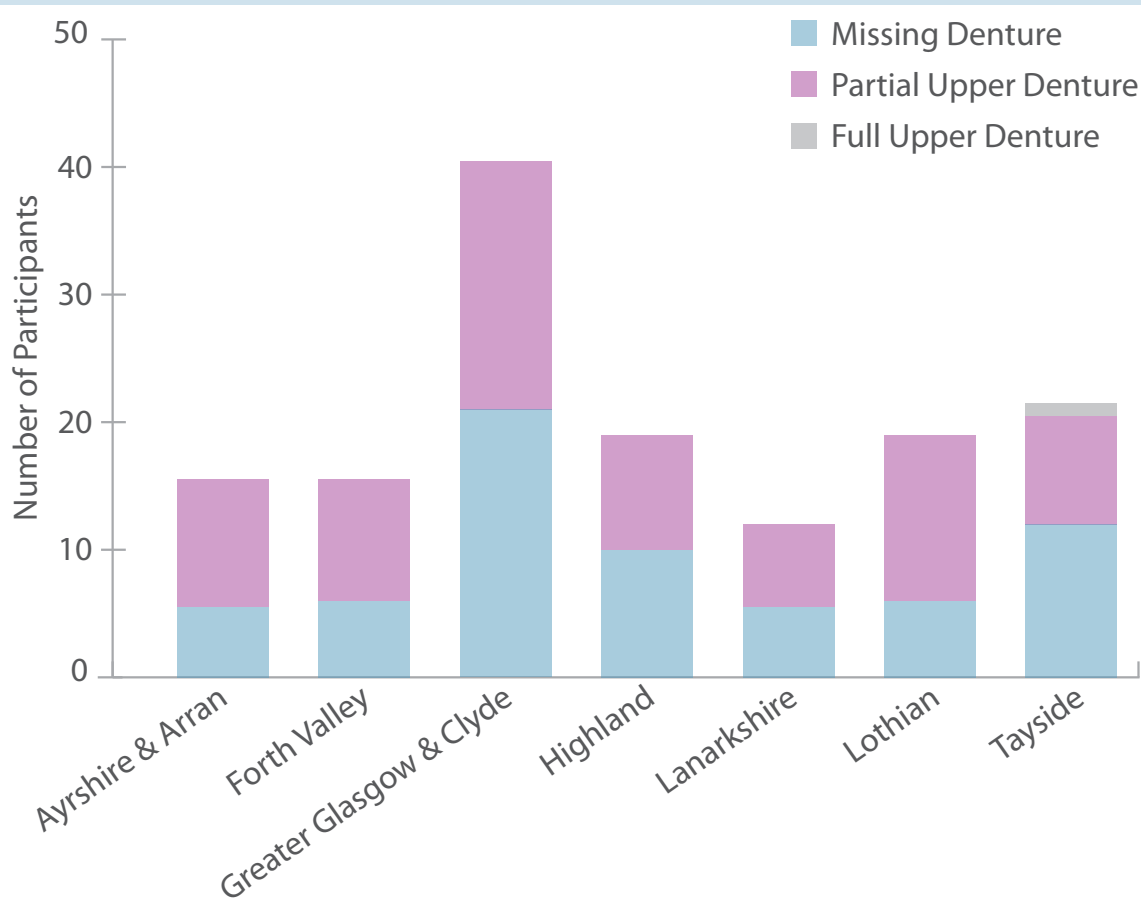
Comparisons of denture wear by gender

Of the denture wearers, larger proportions of male participants wore complete upper (70%) and partial (84%) dentures compared with the female participants who wore complete (30%) and partial (16%) dentures.

Comparisons of denture wear by NHS Board

Figures 18 and 19 show the distribution of upper and lower denture wearers by NHS Board. Larger numbers of participants in NHS Greater Glasgow & Clyde wore complete and partial upper dentures compared with other NHS Boards. Similarly larger numbers of people from NHS Greater Glasgow & Clyde wore lower complete dentures at the time of the survey. One upper denture was lost in NHS Tayside and three partial dentures were lost in NHS Lanarkshire (1) and NHS Tayside (2) (Figures 18 and 19).

Figure 18: Comparison of upper denture wear by NHS Board



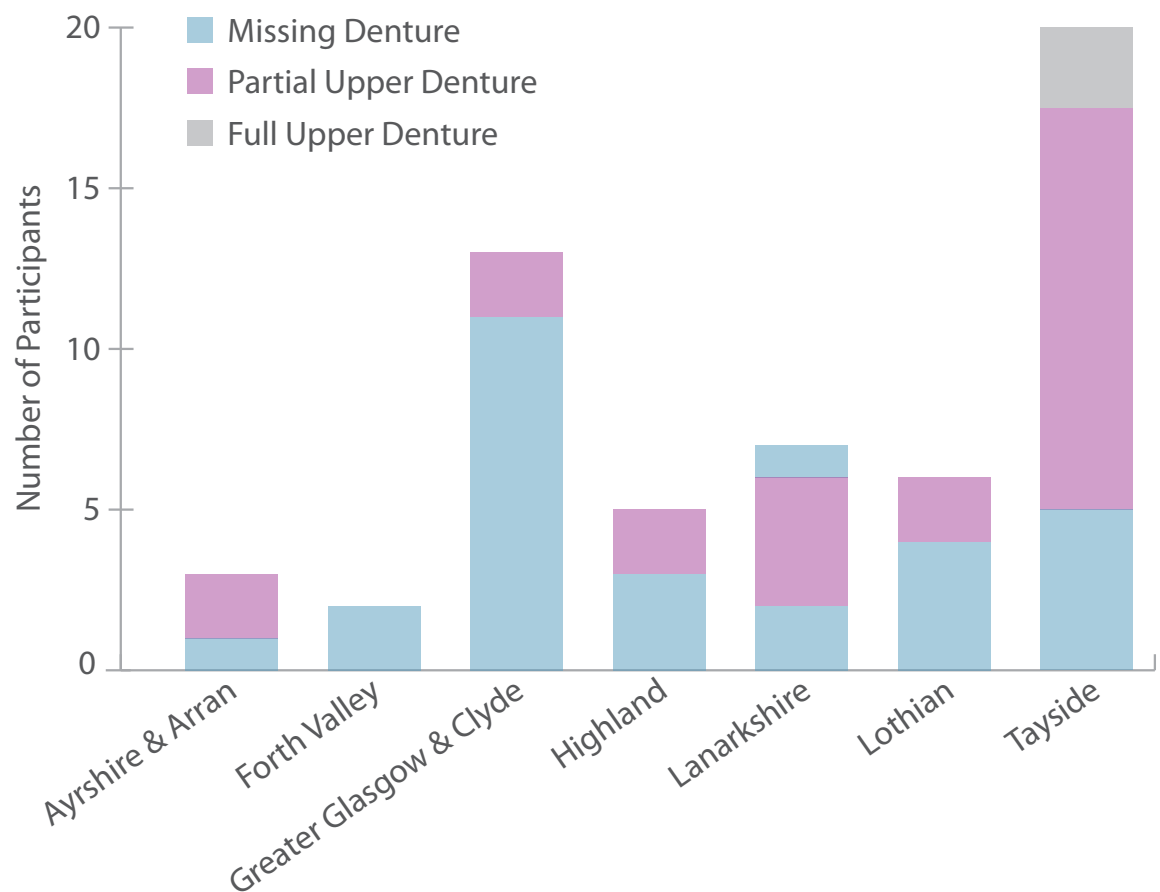


Denture satisfaction: clinical assessment

Fifty percent of upper complete and partial dentures were judged to be clinically satisfactory. One-third of those with lower dentures had partial dentures. In terms of satisfaction, a higher proportion of lower partial dentures (73%) were judged to be satisfactory compared with full lower dentures (33%).

There was no difference between age groups, gender or NHS Boards with regard to the proportion of dentures that were and were not clinically satisfactory. However, larger proportions of those aged between 35 and 44 (39%) had dentures which were not considered to be clinically satisfactory compared with other age groups ($X^2[4]=9.62; P=0.05$).

Figure 19: Comparison of lower denture wear by NHS Board



5.5 ASSESSMENT OF PATIENT MANAGEMENT COMPLEXITY

Of the 853 participants in this survey, 578 were assessed for management complexity using the WCMT. None of the NHS Greater Glasgow & Clyde sample was assessed for patient complexity, therefore the Greater Glasgow & Clyde participants were dropped from this part of the data analysis. Of those who were assessed for patient management complexity, 58% (334) were identified as having at least one complexity of difficulty in accepting dental treatment. Figure 20 shows the proportions of participants with various levels of patient management complexity.

The sample was divided into two groups according to their total WCMT score: patients with no difficulties (360) were designated as standard patients and those with one or more difficulties (334) were designated as complex patients.

Comparisons of patient management complexity by age group

Figure 21 shows the percentage of participants with at least one patient management complexity. Larger proportions of participants in the 25-34 year-old age group (32%) had at least one patient management complexity compared with other age groups ($X^2[4]=19.03; P<0.001$).

Figure 20: Patient management complexity of sample population

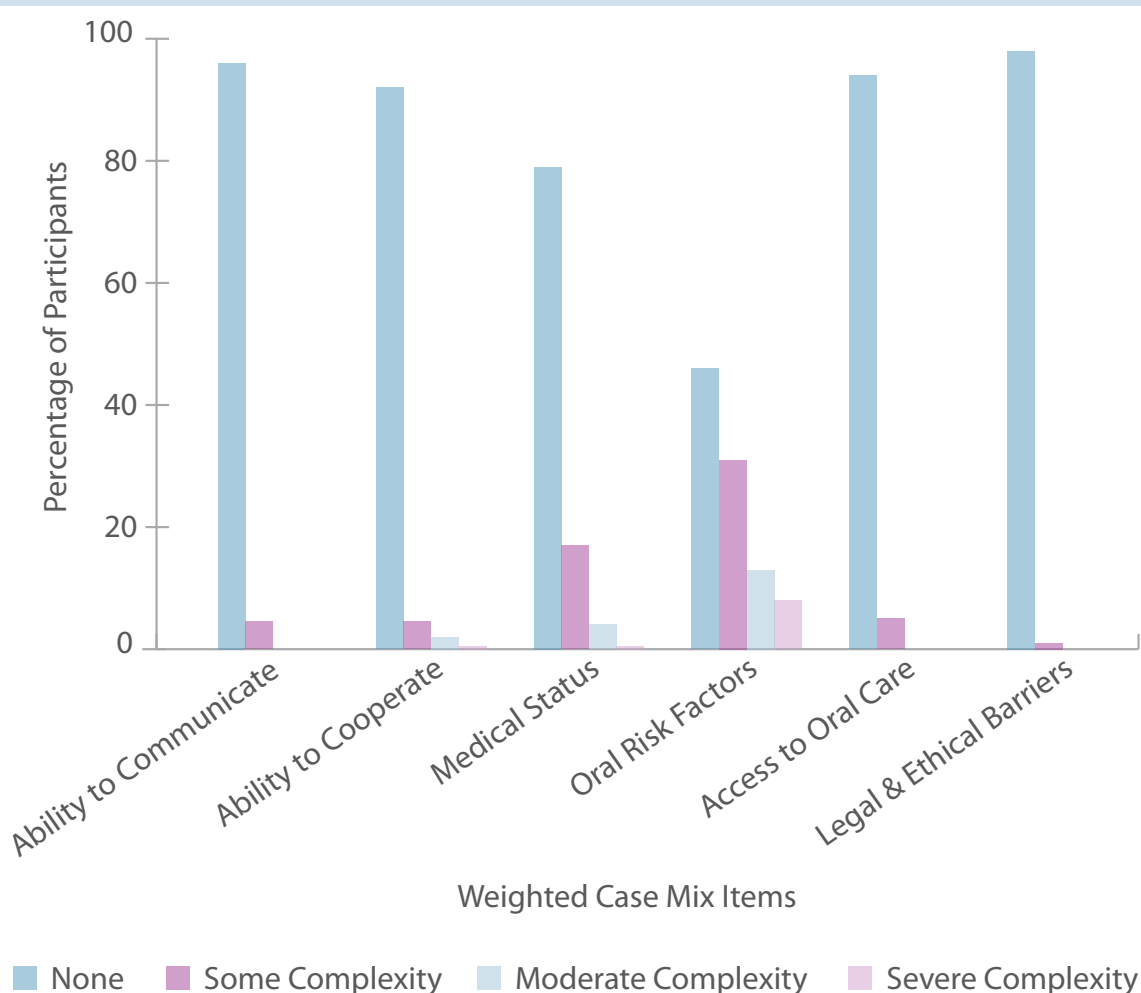


Figure 21: Comparison of patient management complexity by age group

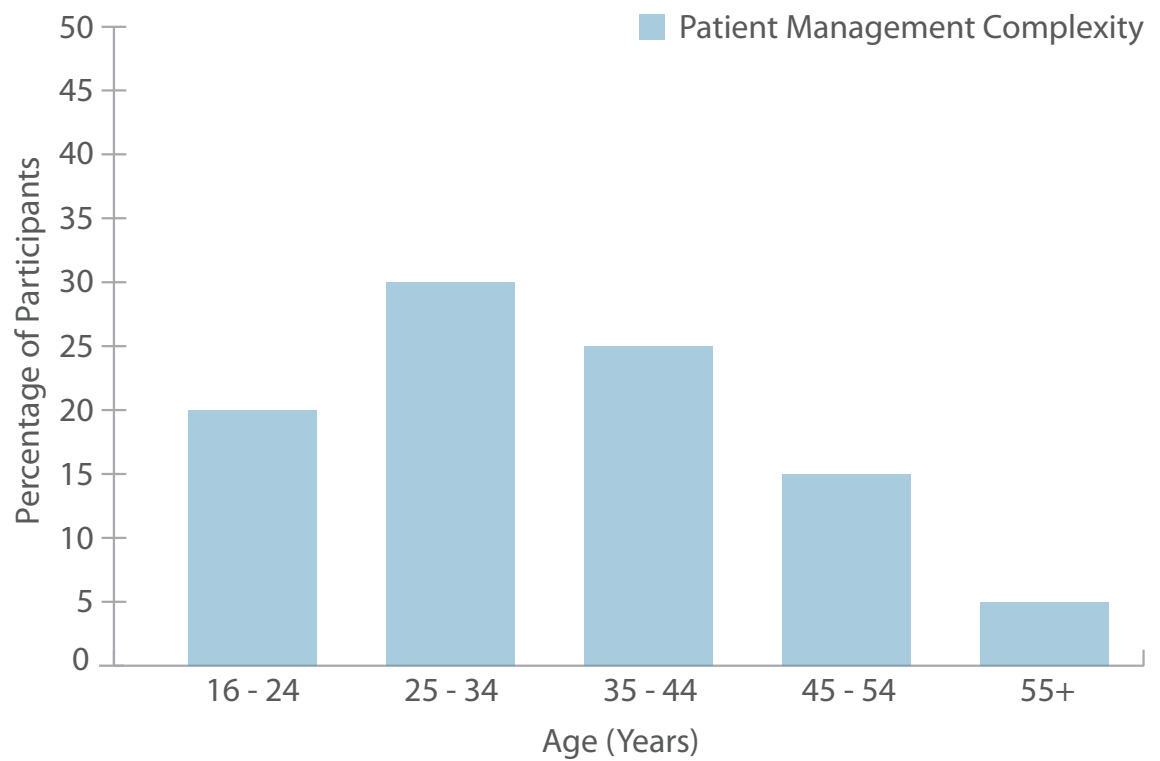
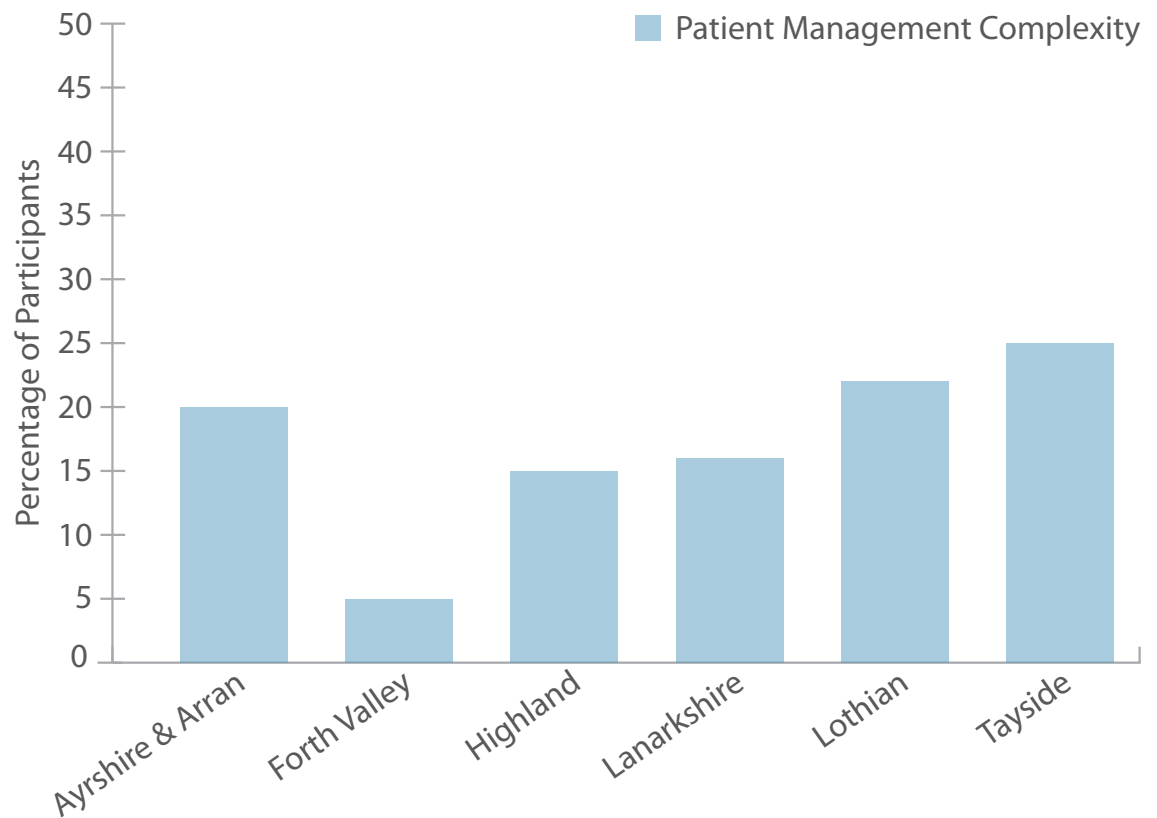


Figure 22: Comparison of patient management complexity by NHS Board



Comparisons of patient management complexity by gender

Equivalent proportions of men (48%) and women (49%) were assessed as having at least one patient management complexity ($X^2[1]=0.16;P=0.68$).

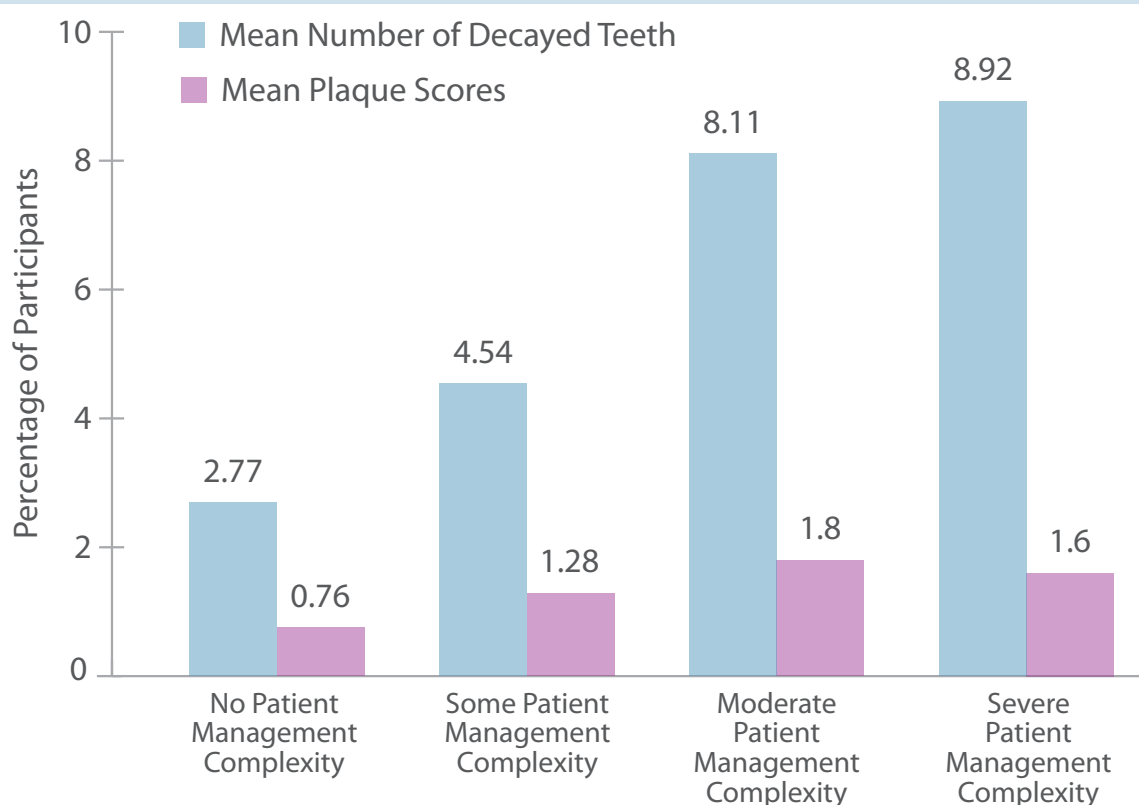
Comparisons of patient management complexity by NHS Board

Figure 22 shows the percentage of participants with at least one patient management complexity by NHS Board. Lower proportions of participants in NHS Forth Valley (2%) were assessed as having a patient management complexity compared with other age groups ($X^2[5] 148.73 :P<0.001$). None of the NHS Greater Glasgow & Clyde sample was assessed for patient management complexity.

Relationship between patient management complexity and oral health status

Participants with at least one patient management complexity had significantly greater mean numbers of decayed teeth, extracted teeth and overall obvious decay experience (DMFT) compared with those who had no patient management complexities. There was no difference in the mean number of filled teeth between the groups (Table 17). Those participants with at least one patient management complexity had significantly higher mean total plaque scores (1.42) compared with those who had no patient management complexities (0.75) ($t=9.74;P<0.001$). This meant that participants who were assessed as having a patient management complexity to treat had poorer oral health status.

Figure 23: Relationship between 'oral health risk factors' and oral health status



Relationship between 'oral health risk factors' and oral health status

Differences in mean numbers of decayed teeth ($F[3,698]=42.76; P<0.001$) and mean plaque scores ($F[3,651]=37.70; P<0.001$) were explained by the grouping variable 'oral risk factors'. Those participants characterised as having moderate and severe cooperation management complexities had significantly higher mean numbers of decayed teeth and higher mean plaque scores compared with those with no cooperation difficulties (Figure 23).

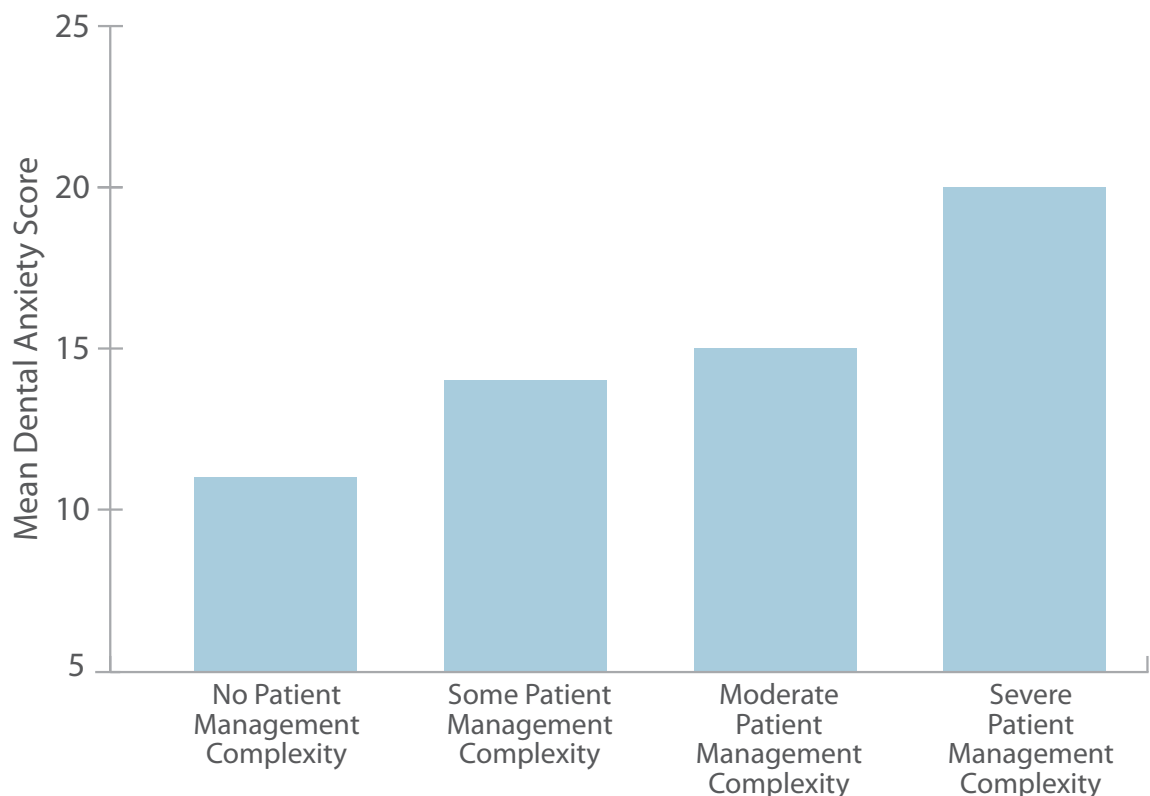
Relationship between 'ability to cooperate' and dental anxiety status

Differences in mean dental anxiety scores were explained by the grouping variable 'ability to cooperate' ($F[3,554]=4.77; P=0.003$). Those participants characterised as having severe cooperation management complexities had significantly higher mean scores for dental anxiety compared with those assessed as having no cooperation difficulties (Figure 24).

Table 17: Relationship between patient management complexity and oral health status

Oral health status (Obvious decay experience)	Patient management complexities		t	p
	None	At least one		
Decayed teeth (D_3)	2.82 (4.42)	5.75 (5.54)	7.05	<0.001
Missing teeth (M)	6.45 (8.09)	8.54 (8.31)	3.04	0.003
Filled teeth (F)	3.37 (3.75)	3.43 (3.71)	0.94	0.34
D_3 MFT	12.94 (8.77)	17.72 (8.19)	6.64	<0.001

Figure 24: Relationship between 'ability to cooperate' and dental anxiety score



5.6 DENTAL ATTENDANCE, TREATMENT EXPERIENCES AND ATTITUDES TO DENTAL CARE

Of the total sample, 31% reported that they were currently registered with a dentist. Fifty-four percent (459) stated they had not visited the dentist for at least 10 years. Smaller proportions had visited the dentist within a year of the survey (15%), in the previous 2 years (8%), within 5 years of the survey (14%) or between 6 and 10 years ago (9%). Of those reporting the reason for their last visit, 68% (752) stated that they had attended the dentist because of pain, discomfort or trouble with their teeth. Only 21% of the total sample had attended for a routine dental examination or check-up.

Reported dental treatment experiences are outlined in Table 18, with injection in the gum (experienced by 88% of participants) and fillings (85%) being the most common treatments. The dental treatment experiences were divided into three broad category groups: (1) dental treatment (fillings,

extractions and dentures), (2) preventive dental treatments (fluoride treatments, fissure sealants, scale and polish) and (3) treatment for dental anxiety (relative analgesia, IV sedation), and were compared by demography and NHS Board of residence.

Dental treatment: Significantly lower proportions of participants aged 55 years and older stated that they had had experience of fillings and extractions compared with other age groups. Significantly greater proportions of participants aged 35-44 years stated that they had been provided with dentures compared with other age groups.

Preventive treatment: Significantly smaller percentages of participants aged 55 years and older stated that they had had experience any preventive dental treatments.

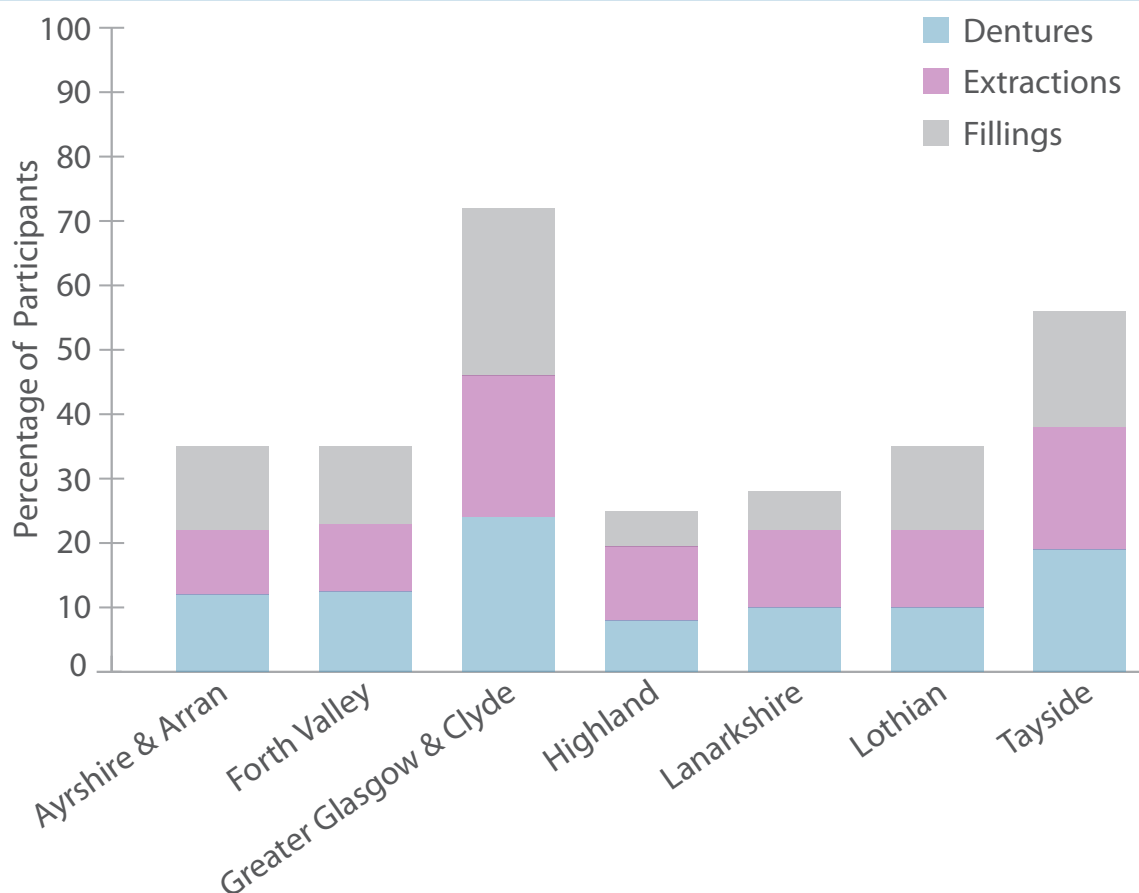
Treatment for dental anxiety: Equivalent proportions of all age groups had experiences of laughing gas and IV sedation for dental treatment for their dental anxiety.

Table 18: Reported dental treatment ever received

	Treatment Received n (%)	Treatment Not Received n (%)	Cannot Remember n (%)
Fillings	723 (85)	80 (9)	50 (6)
Injection in gum	751 (88)	7 (7)	45 (5)
Injection in arm (IV sedation)	259 (30)	518 (61)	76 (8)
X-rays	647 (76)	128 (15)	78 (9)
Extractions	650 (76)	140 (16)	63 (7)
Laughing gas (RA)	233 (27)	508 (60)	112 (13)
Fluoride treatments	119 (14)	494 (58)	240 (28)
Fissure sealants	114 (13)	480 (56)	259 (31)
General anaesthetic (gas)	338 (40)	415 (49)	100 (11)
Abscess	494 (58)	275 (32)	84 (10)
Crowns	189 (22)	545 (64)	119 (14)
Bridge work	93 (11)	625 (73)	135 (16)
Scale and polish	473 (55)	299 (35)	81 (9)
Dentures	257 (30)	526 (62)	70 (8)

Table 19: Dental treatment experiences by age group							
	16-24 yrs n (%)	25-34 yrs n (%)	35-44 yrs n (%)	45-54 yrs n (%)	55+ yrs n (%)	X ²	p
Dental treatments							
Fillings	187 (26)	197 (28)	169 (24)	106 (15)	48 (7)	12.12	0.02
Extractions	197 (28)	182 (29)	165 (26)	102 (16)	3 (2)	80.00	<0.001
Dentures	25 (10)	62 (24)	78 (31)	56 (22)	33 (13)	90.99	<0.001
Preventive treatments							
Fluoride treatments	29 (25)	35 (30)	33 (29)	16 (15)	2 (1)	7.83	0.10
Fissure sealants	46 (42)	30 (27)	26 (24)	8 (7)	0	20.73	<0.001
Scale and polish	93 (20)	126 (27)	129 (28)	82 (19)	31 (7)	47.48	<0.001
Dental anxiety treatments							
Laughing gas (RA)	60 (26)	70 (31)	59 (26)	24 (11)	14 (6)	4.99	0.29
Injection in arm (IV sedation)	65 (26)	80 (32)	60 (24)	25 (10)	21 (8)	7.37	0.12

Figure 25: Dental treatment experiences by NHS Board



Dental treatment experiences by gender

(Table 20)

Dental treatment: Equivalent proportions of male and female participants had experience of fillings, extractions and dentures.

Preventive treatment: Significantly larger proportions of male participants stated that they had had fluoride treatment compared with the women. No other differences were noted.

Treatment for dental anxiety: Equivalent proportions of male and female participants had experience of laughing gas and IV sedation for dental treatment for their dental anxiety.

Greater proportions of participants from NHS Greater Glasgow & Clyde compared with the other NHS Boards stated that they had had fissure sealants ($X^2[12]=64.74$; $P<0.001$) as well as having their teeth scaled and polished ($X^2[12]=29.57$; $P=0.003$) (Figure 26).

Treatment for dental anxiety: Significantly greater proportions of participants from NHS Greater Glasgow & Clyde and NHS Tayside reported to have had laughing gas ($X^2[12]=22.18$; $P=0.04$) and IV sedation ($X^2[12]=24.28$; $P=0.02$) compared with other NHS Boards (Figure 27).

Dental treatment experiences by NHS Board

Dental treatment: Significantly larger proportions of participants from NHS Greater Glasgow & Clyde and NHS Tayside reported to have had teeth extracted ($X^2[12]=26.99$; $P=0.008$) and been provided with dentures ($X^2[12]=37.77$; $P<0.001$) compared with other NHS Boards (Figure 25).

Preventive treatment: Significantly smaller percentages of participants from NHS Highland compared with other NHS Boards had experience of fluoride treatments ($X^2[12]=26.99$; $P=0.008$).

Attitudes to accessing dental treatment

Seventy-nine percent (632) of the sample population stated that they would like to drop-in without an appointment for dental treatment. Sixty-one percent (490) stated that they wanted to know more about the dental treatment they were to receive. Over half of the sample (59%) stated that they would prefer to take painkillers than attend for dental treatment, 57% felt that the worst part of dental treatment was waiting and 48% found NHS dental treatment difficult to find. Smaller proportions of the sample felt that they did not want intricate dental treatment (36%), felt that they were on a conveyor belt (33%) and felt that receptionists were not welcoming (28%).

Figure 26: Preventive treatment experiences by NHS Board

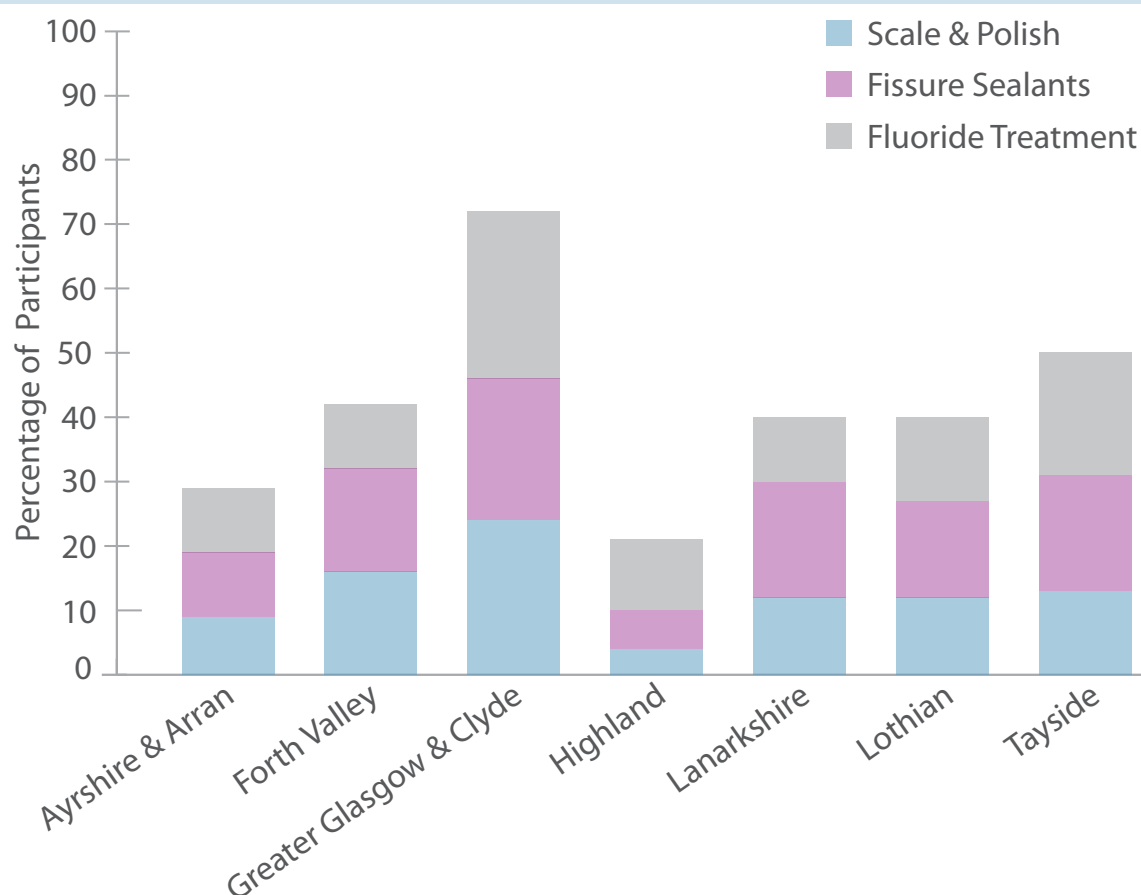


Figure 27: Dental anxiety treatment experiences by NHS Board

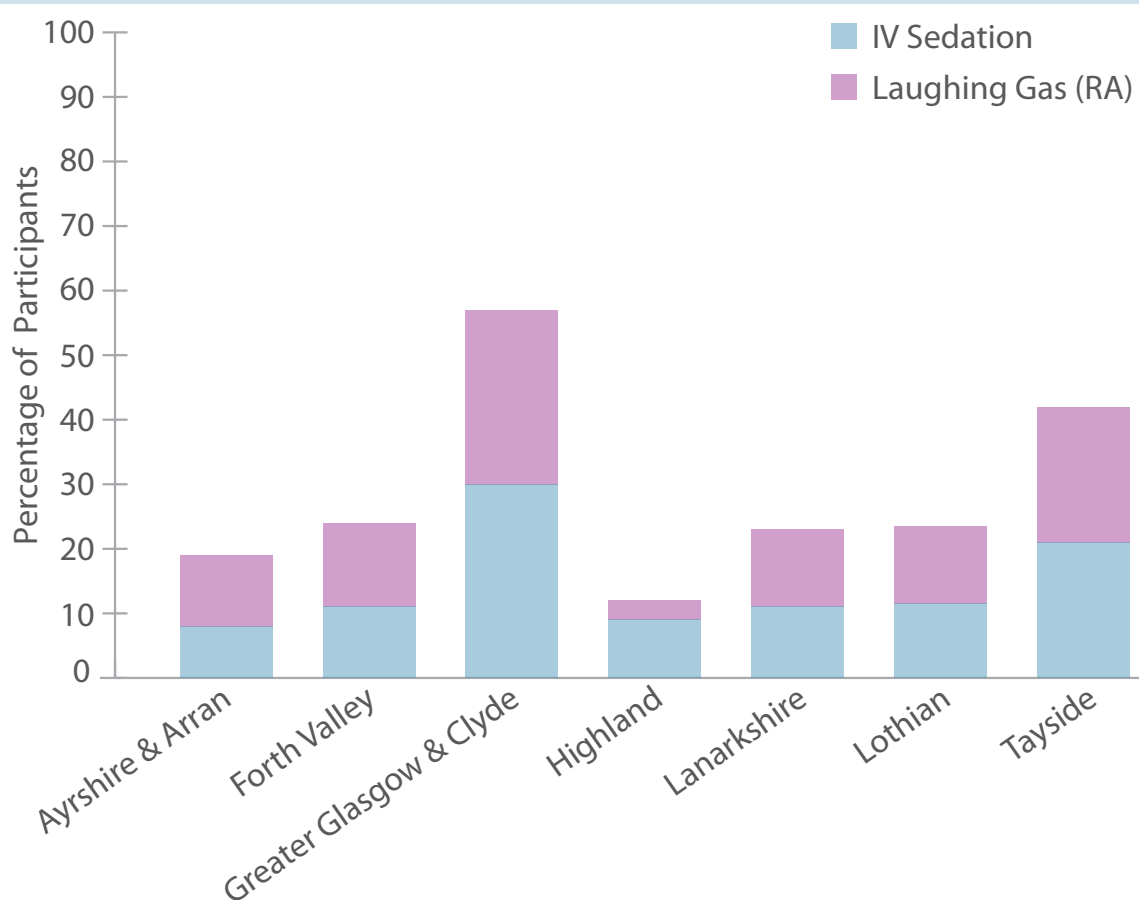


Table 20: Dental treatment experiences by gender

	Male n (%)	Female n (%)	X ²	p
Dental treatments				
Fillings	531 (88)	192 (90)	3.59	0.17
Extractions	484 (81)	166 (79)	2.19	0.34
Dentures	191 (32)	66 (31)	0.15	0.92
Preventive treatments				
Fluoride treatments	92 (16)	27 (13)	7.69	0.02
Fissure sealants	78 (14)	17 (36)	2.78	0.25
Scale and polish	347 (58)	125 (58)	0.15	0.99
Dental anxiety treatments				
Laughing gas (RA)	173 (30)	60 (29)	3.55	0.17
Injection in arm (IV sedation)	193 (33)	65 (31)	1.16	0.56

Dental treatment access attitudinal scales: comparisons by age group

No differences in mean score for the access inhibition scale ($F[4,747]=0.66:P=0.61$) or the access anxiety scale was shown between age groups ($F[4,779]=2.32:P=0.06$). However, participants in older age groups had lower mean scores for access anxiety compared with younger age groups (Figure 28).

Dental treatment access attitudes and scales: comparisons by gender

Women in the sample had significantly greater mean scores for the access inhibition and for access anxiety scales compared with the men (Table 21).

Women compared with the men in the sample had significantly greater mean scores for the individual attitudes: ‘dental receptionists are not helpful’ (AI2), ‘feel like they are on a conveyor belt’ (AI4), ‘taking painkillers rather than going to the dentist’ (AA1) and ‘dislike lying flat’ (AA3) (Table 22).

Dental treatment access attitudes and scales: comparisons by NHS Board

There were no differences in mean score for the access inhibition scale ($F[6,758]=1.09:P=0.36$) between NHS Boards. There was a significant difference in mean access anxiety scores which was explained by the grouping variable ‘NHS Board’ ($F[6,758]=3.82:P=0.001$). This meant that participants from NHS Highland had significantly lower mean scores for access anxiety compared with participants from NHS Greater Glasgow & Clyde, NHS Lanarkshire and NHS Lothian (Figure 29).

Significant differences in mean scores for individual attitudes were explained by the grouping variable ‘NHS Board’.

- Participants in NHS Highland had significantly lower mean scores compared with other NHS Boards for the attitudes ‘the worst part is waiting’ ($F[6,802]=2.56:P=0.02$) and ‘dislike lying flat’ ($F[6,800]=4.08:P<0.001$). This meant that participants from NHS Highland did not feel that waiting was the worst part of dental treatment nor did they dislike lying down in the dental chair for treatment.
- Participants in NHS Highland compared with NHS Ayrshire & Arran and NHS Lanarkshire had significantly lower mean scores for the attitude ‘not wanting intricate dental treatment’ ($F[6,797]=3.48:P=0.002$). This meant that participants from NHS Highland compared with other NHS Boards did not want intricate dental treatment.
- NHS Ayrshire & Arran and NHS Highland had significantly greater mean scores compared with other NHS Boards for the attitude ‘NHS treatment is hard to find’ ($F[6,801]=8.38:P<0.001$). This meant that participants in NHS Ayrshire & Arran and NHS Highland compared with the other NHS Boards felt that NHS treatment was hard to find.

Figure 28: Comparison of mean scores for access anxiety scale by age group

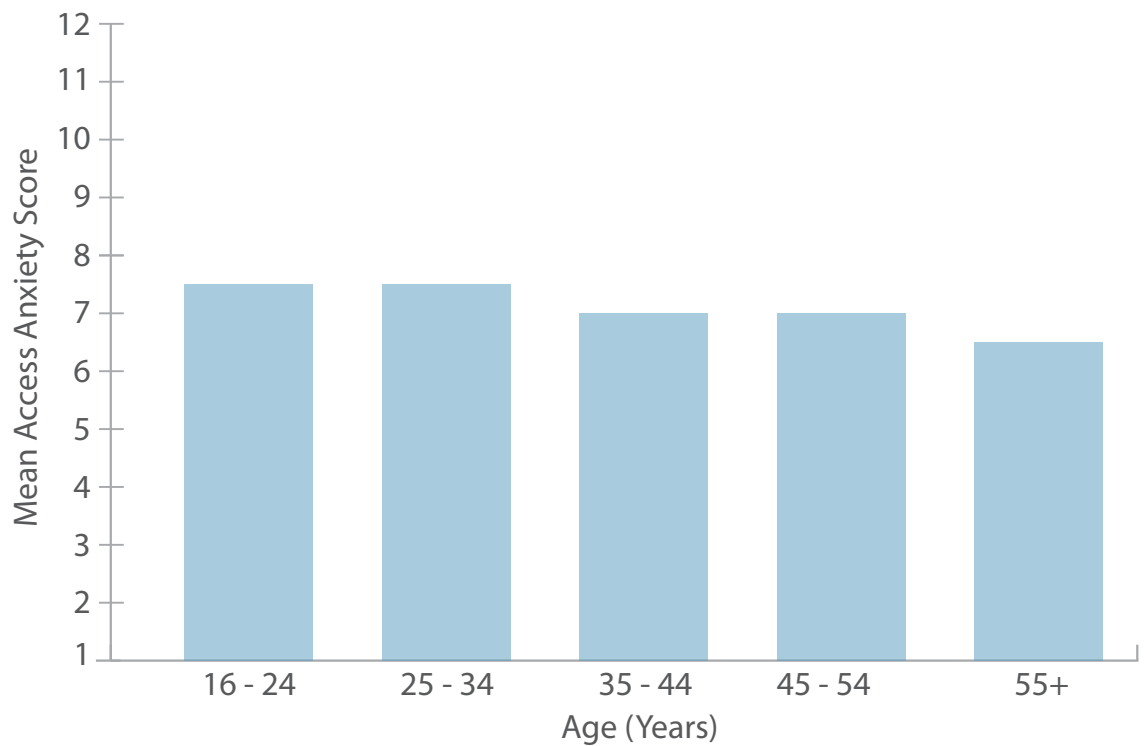


Figure 29: Comparison of mean scores for access anxiety by NHS Board

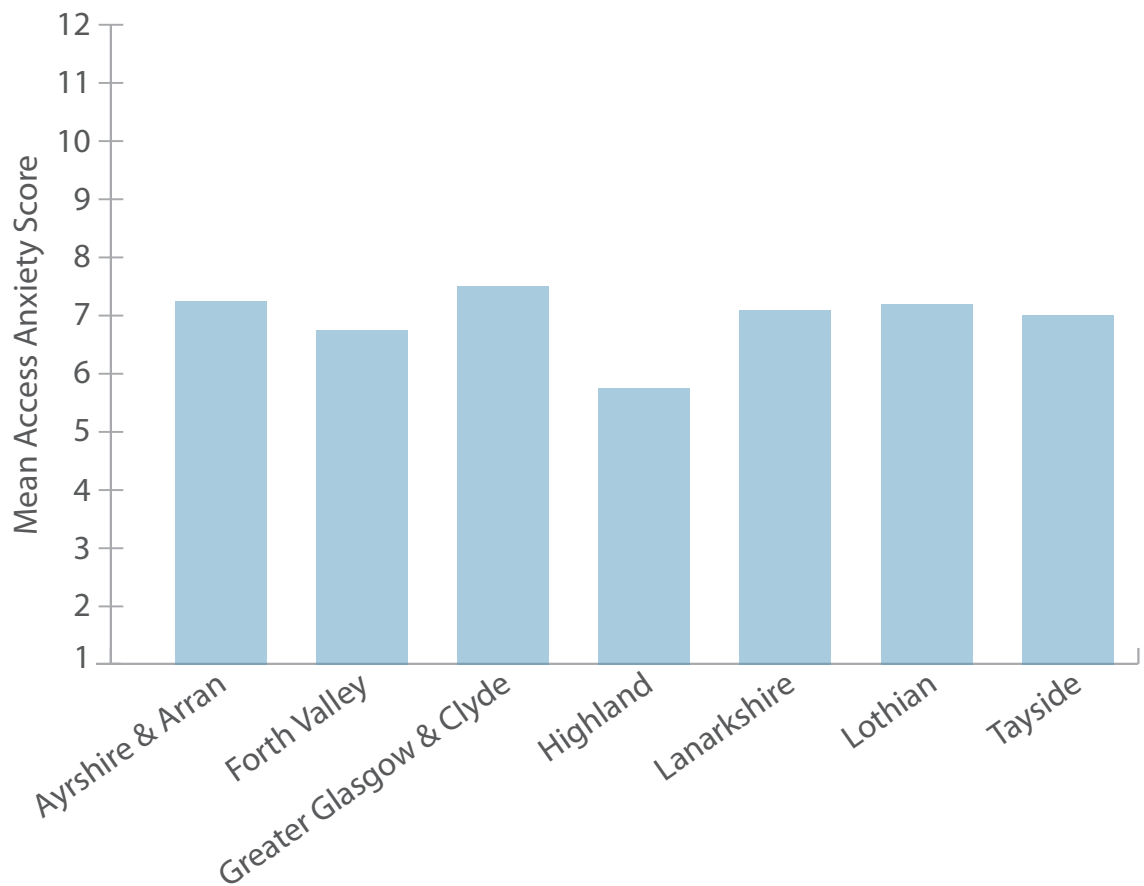




Table 21: Dental treatment access attitudinal scales: comparison by gender

Dental treatment access attitudinal scales	Gender		t	p
	Male [mean: (SD)]	Female [mean: (SD)]		
Access inhibition	14.41 (3.98)	15.18 (4.43)	2.16	0.03
Access anxiety	6.90 (2.67)	7.57 (2.69)	3.09	0.002

Table 22: Dental treatment access attitudes: comparison by gender

Dental treatment access attitudinal scales	Gender		t	p
	Male [mean: (SD)]	Female [mean: (SD)]		
AI 2	1.79 (1.07)	2.00 (1.14)	2.39	0.02
AI 4	1.92 (1.10)	2.33 (1.22)	4.27	<0.001
AA1	2.62 (1.26)	2.83 (1.28)	2.08	0.04
AA 2	2.48 (1.26)	2.67 (1.24)	1.92	0.06
AA 3	1.81 (1.15)	2.10 (1.29)	2.89	0.004

5.7 PSYCHOSOCIAL HEALTH

Psychosocial health: dental anxiety

The mean modified dental anxiety scale (MDAS) score for the entire sample was 11.7 [95% CI: 11.21, 12.25]. The cut-off for dental phobia on the MDAS is 19 or over. Twenty percent (170) of participants scored 19 or over, suggesting that one-fifth of the sample could be categorised as dentally phobic.

Figure 30 shows the proportions of participants who stated that they experienced dental anxiety. Larger proportions of participants reported that they were extremely anxious about having their teeth drilled (24%) and having a local anaesthetic (22%). The least feared item was a scale and polish with only 11% stating they were extremely anxious.

Dental anxiety: comparisons by age group

Significant differences in mean MDAS scores were explained by the grouping variable 'age group' ($F[4,778]=6.49; P<0.001$). Participants in the 55+ age group had significantly lower mean scores for dental anxiety compared with those aged between 25 and 34 years.

Seventeen percent of men (101) and 32% (69) of women scored 19 or over suggesting that they were dentally phobic.

Dental anxiety: comparisons by gender

Women (14.42 [6.86]) compared with men (11.26 [6.29]) had significantly higher mean scores for dental anxiety ($t=5.85; P<0.001$). Figure 31 shows the significant differences in mean scores for the individual items of MDAS. Women compared with men had significantly higher mean scores for anxiety associated with 'treatment tomorrow' ($t=4.84; P<0.001$), 'waiting room' ($t=5.45; P<0.001$), 'teeth drilled' ($t=5.53; P<0.001$), 'teeth scaled and polished' ($t=4.08; P<0.001$) and local anaesthetic injection ($t=5.97; P<0.001$).

Dental anxiety: comparisons by NHS Board

The dental anxiety experienced by the participants varied between the NHS Boards (Figure 32). The mean scores for dental anxiety across the NHS Boards varied from 10.46 in NHS Highland to 13.42 in NHS Greater Glasgow & Clyde ($F[6,792]=2.39; P=0.02$).

The proportions of participants classified as dentally phobic (those scoring 19 and over) varied between the NHS Boards (Figure 33). Significantly smaller proportions of respondents in NHS Forth Valley and NHS Highland were phobic compared with other NHS Boards ($\chi^2[6]=18.79; P=0.005$).

Figure 30: Percentage of participants who report dental anxiety by MDAS items

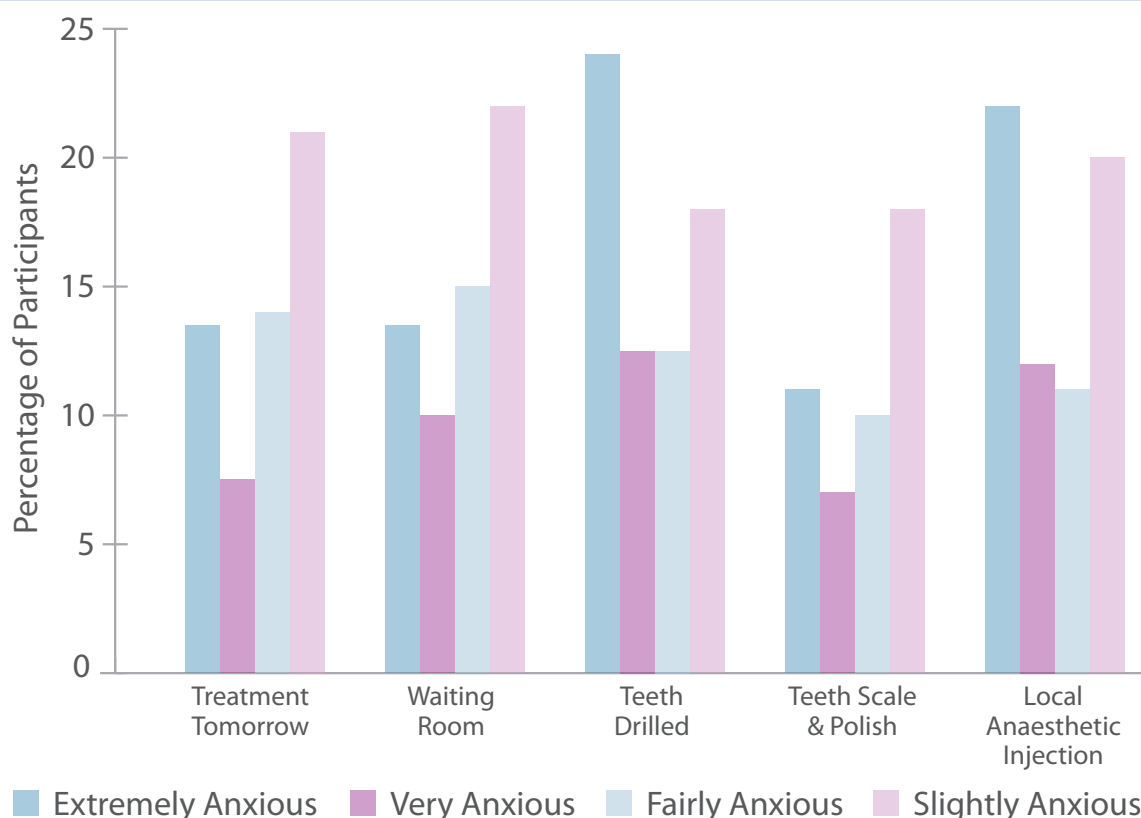


Figure 31: Comparison of mean scores for dental anxiety by gender

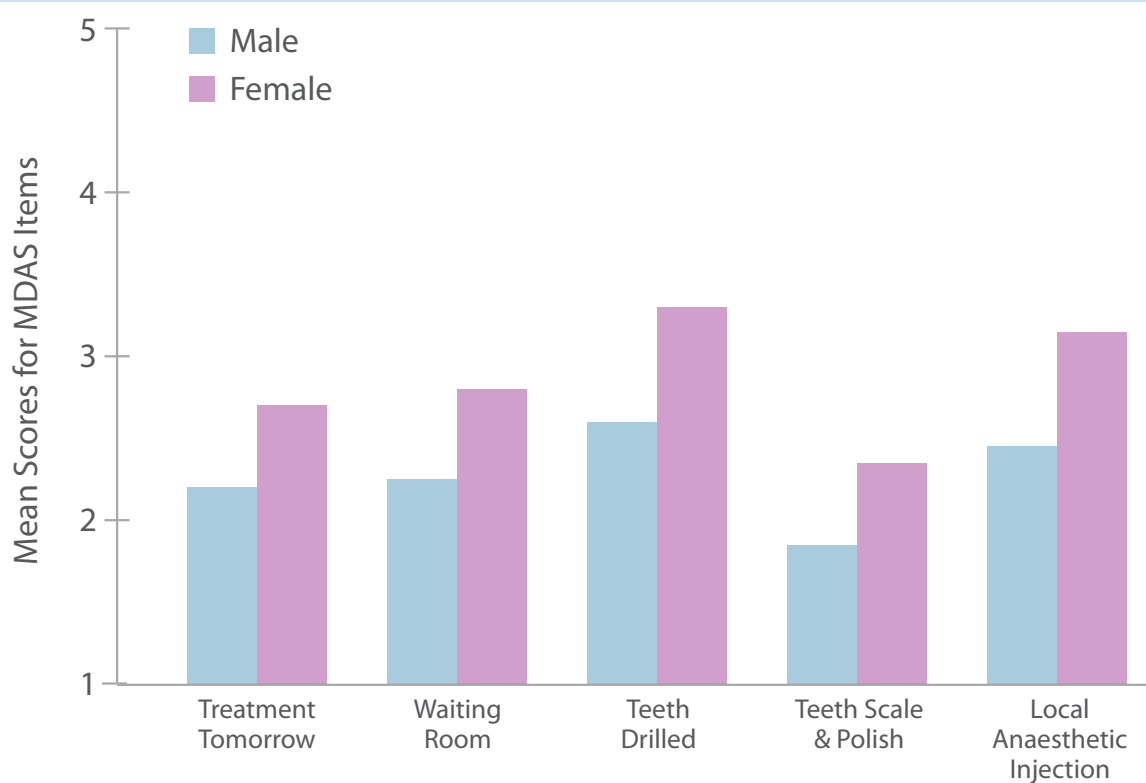


Figure 32: Comparison of mean scores for dental anxiety by NHS Board

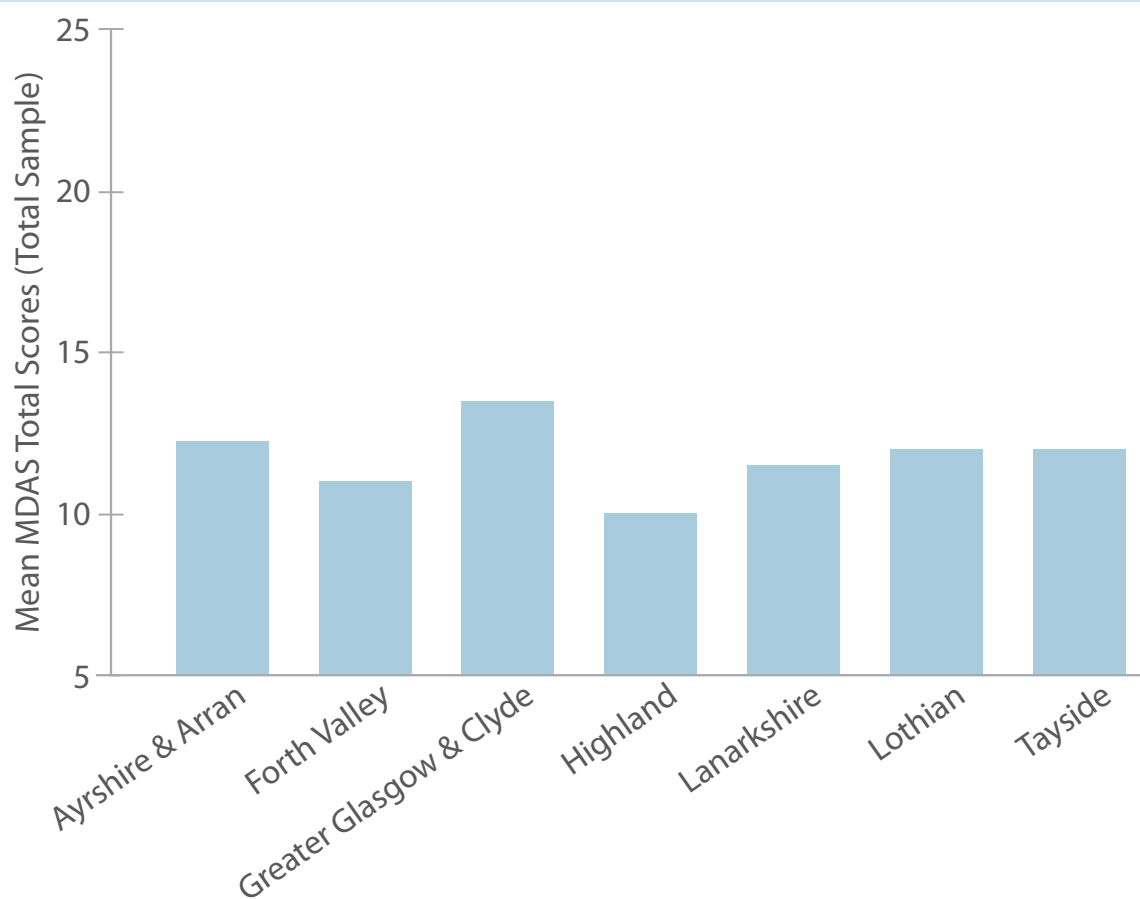
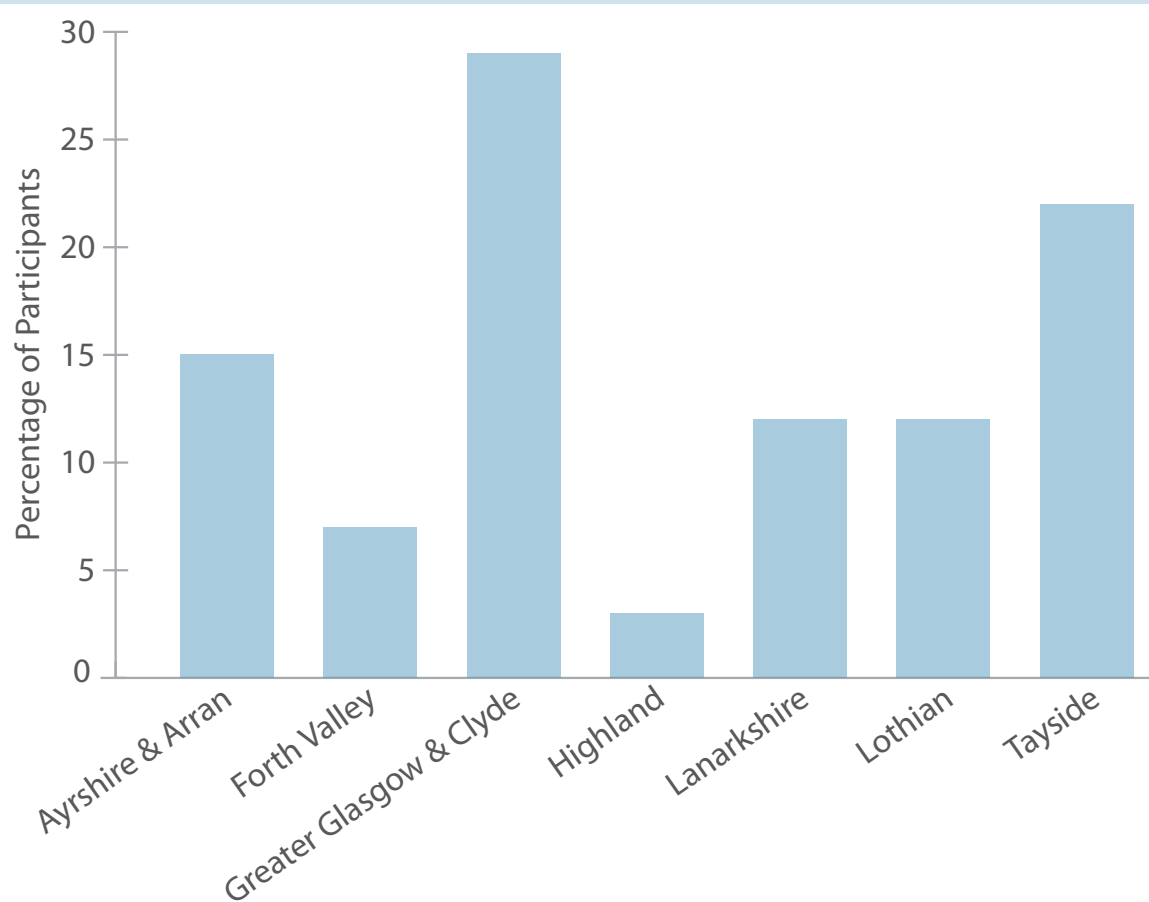


Figure 33: Comparison of percentage of participants with dental phobia by NHS Board



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Psychosocial health: oral health-related quality of life (OHIP-14)

Commonly experienced impacts of oral ill-health upon quality of life were assessed using OHIP-14. The mean OHIP-14 total score was 1.22 [95%CI: 1.14,1.29].

Table 23 and Figure 34 show the frequency of oral health impacts experienced by this sample of homeless people in the last 12 months. Twenty-five percent of the sample reported feeling self-conscious very often, and 23% reported feeling embarrassed very often about the appearance of their mouth and teeth. In addition, 13% stated that very often they found their lives less satisfying because of problems with their mouth and teeth. As expected, many respondents occasionally experienced painful aching (31%), discomfort when eating (28%), and interruptions during meals (21%).

Table 23 shows that for this population of homeless people, oral health impacted upon their psychological functioning with regard to psychological discomfort and disability. In comparison with the UK Adult Dental Health Survey 1998,[5] larger proportions of participants in the homeless sample experienced greater numbers of impacts compared with the UK population.

Oral health-related quality of life: comparison by age group

Mean oral health-related quality of scores was explained by the grouping variable 'age group'. Participants aged 16-24 and those aged 55+ had significantly fewer oral health impacts compared with those aged between 25 and 35 years of age (Table 24). This means that oral health impacted particularly upon those aged between 25 and 34 years of age compared with the other age groups.

Oral health-related quality of life: comparison by gender

Female participants (1.38 [1.12]) had significantly greater mean scores for oral health-related quality of scores compared with male participants (1.06 [0.98]) ($t=2.39$; $P=0.02$). This meant that women compared with men experienced a greater number of oral health impacts upon their quality of life.

Oral health-related quality of life: comparison by NHS Board

There were no differences in mean oral health-related quality of life scores between participants from the various NHS Boards (Table 25). This meant that all participants experienced at least one oral health impact which influenced their quality of life.

Figure 34: Percentage of total sample experiencing oral health impacts

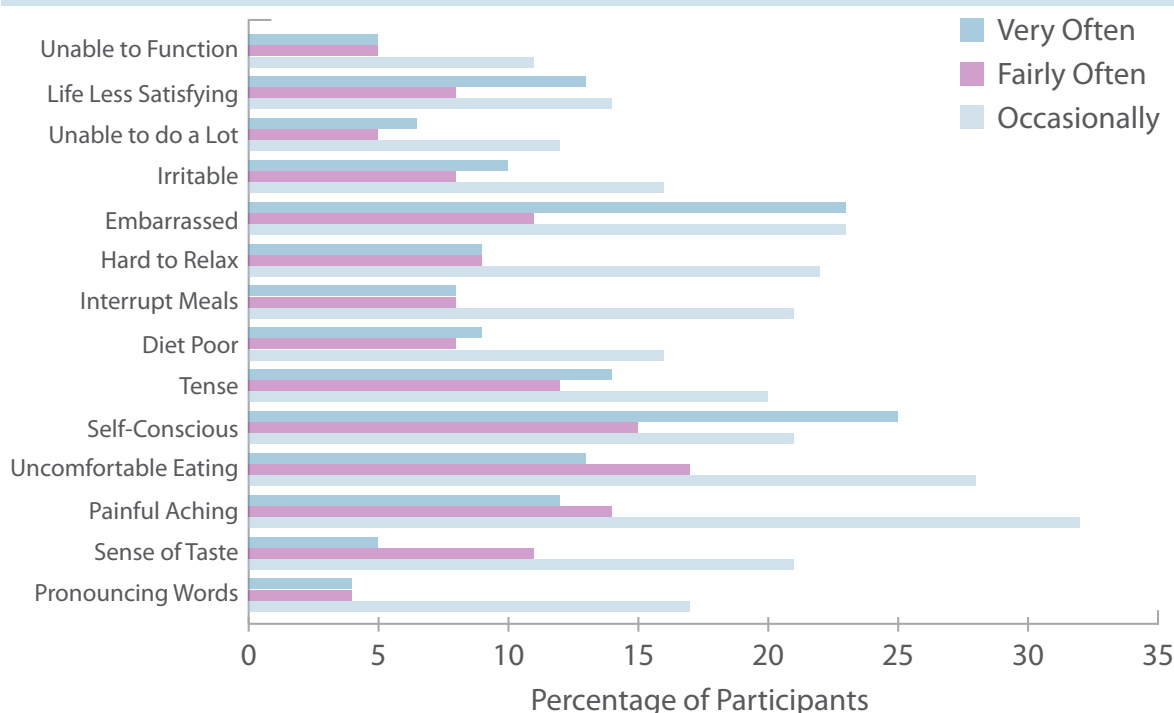


Table 23: Frequency of oral health impact in the preceding 12 months: comparison with ADHS

Type of Problem	Frequency of Problem					
	Occasionally		Fairly Often		Very Often	
	Smile4life	ADHS	Smile4life	ADHS	Smile4life	ADHS
Functional limitation						
Pronouncing words	17%	3%	4%	1%	4%	0%
Sense of taste worsened	21%	6%	11%	1%	5%	1%
Physical pain						
Painful aching mouth	31%	22%	17%	4%	12%	2%
Uncomfortable to eat	29%	23%	17%	4%	13%	2%
Psychological discomfort						
Felt self-conscious	21%	15%	15%	4%	25%	4%
Felt tense	20%	10%	12%	1%	14%	1%
Physical disability						
Had an unsatisfactory diet	16%	3%	7%	0%	9%	0%
Had to interrupt meals	21%	6%	8%	0%	8%	0%
Psychological disability						
Difficult to relax	22%	8%	9%	1%	9%	1%
Felt embarrassed	23%	10%	11%	2%	23%	2%
Social disability						
Irritable with other people	16%	6%	8%	1%	10%	0%
Difficulty in doing usual jobs	12%	2%	5%	0%	6%	0%
Handicap						
Life less satisfying	14%	5%	8%	1%	13%	1%
Unable to function	11%	1%	5%	0%	5%	0%

ADHS: the Adult Dental Health Survey for the UK (1998)

Table 24: Oral health-related quality of life: comparison by age group

Age group	Mean OHIP score	95% CI	F[df]	p
16-24	0.94 ¹	0.82, 1.07	11.21 [4, 713]	<0.001
25-34	1.48 ³	1.33, 1.64		
35-44	1.41 ^{2,3}	1.24, 1.57		
45-54	1.05 ^{1,2}	0.87, 1.24		
55+	0.86 ¹	0.62, 1.11		

*The suffixes show the significant differences in mean OHIP scores which exist between age groups

Table 25: Oral health-related quality of life: comparison by NHS Board

NHS Board	Mean OHIP score	95% CI	F[df]	p
Ayrshire & Arran	1.17	0.93, 1.40	0.62 [6, 725]	0.71
Forth Valley	1.13	0.94, 1.32		
Greater Glasgow & Clyde	1.20	1.06, 1.34		
Highland	1.17	0.95, 1.39		
Lanarkshire	1.24	1.00, 1.48		
Lothian	1.16	0.94, 1.39		
Tayside	1.35	1.17, 1.54		

PARADE
NO PARKING
SATURDAY 19th MAY 2007
7.00am - 2.00pm



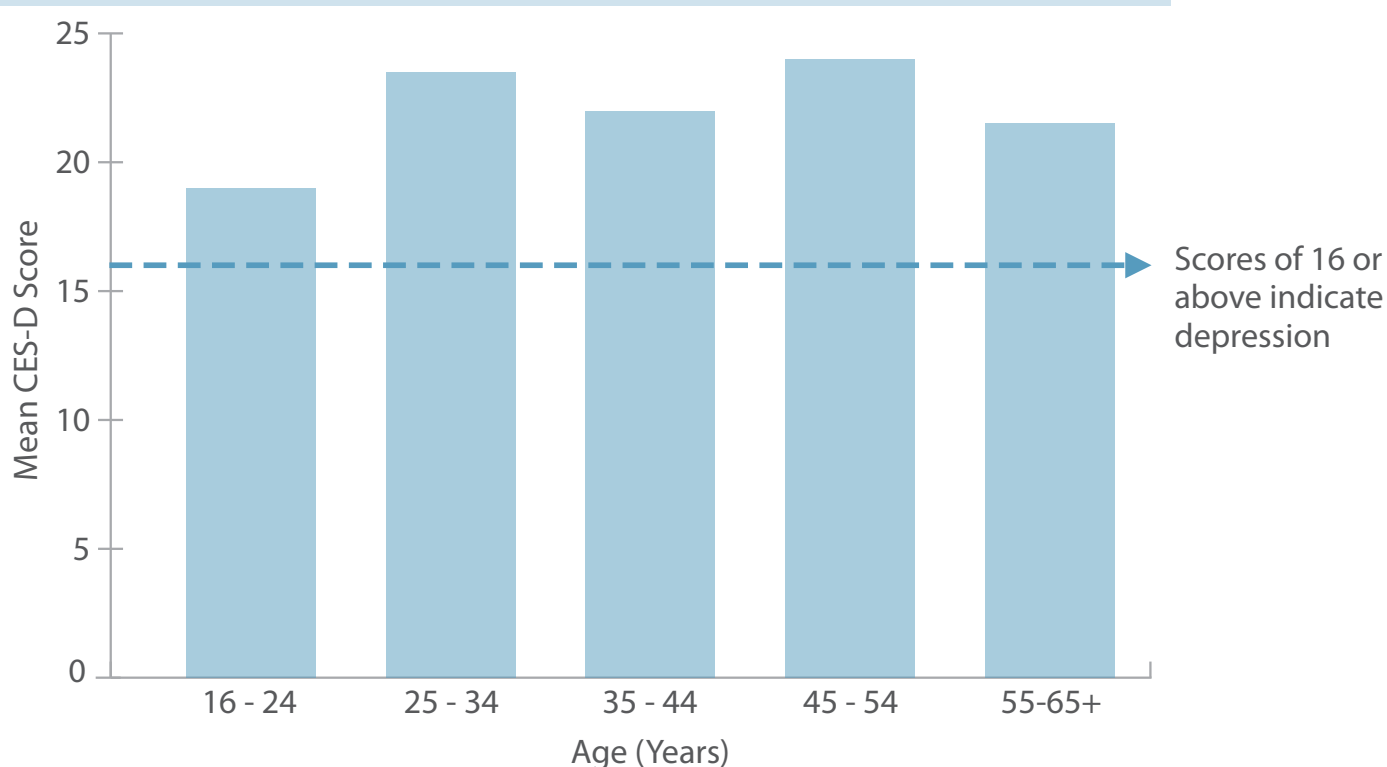
Psychological health and social well-being: depression

Two percent of men and 2.5% of women in the UK are said to suffer from depression. In this homeless population, 58% of respondents who completed the CES-D scored at least 16, which suggested that they were suffering from a depressive illness. This compared unfavourably with the 38.9% of people in north London who were identified as being depressed by the CES-D in a previous general population study [28]. The mean score for depression among the homeless sample was 21.71 [95% CI: 20.60, 22.83].

Depression: comparison by age group

Mean depression scores were highest in the 25-34 (23.76) and 45-54 (23.83) age groups. Significant differences in mean depression scores were explained by the grouping variable 'age group' ($F[4,543]=2.77$; $P=0.03$). Therefore, participants aged 16-24 had significantly lower mean scores compared with other age groups (Figure 35).

Figure 35: Comparison of mean depression scores by age group



Depression: comparisons by gender

Female participants (24.81 [13.76]) compared with male participants (20.54 [13.80]) had significantly higher mean scores for depression ($t=3.25$: $P=0.001$). Women compared with men had significantly higher mean scores for the individual depression (CES-D) scale items: having a poor appetite ($t=3.18$: $P=0.002$), feeling that life was a failure ($t=3.37$: $P=0.001$), feeling fearful ($t=2.66$: $P=0.008$), talking less ($t=2.43$: $P=0.02$), having crying spells ($t=7.78$: $P<0.001$), feeling sad

($t=4.14$: $P<0.001$) and feeling that people dislike them ($t=2.29$: $P=0.02$) (Figure 36).

Depression: comparisons by NHS Board

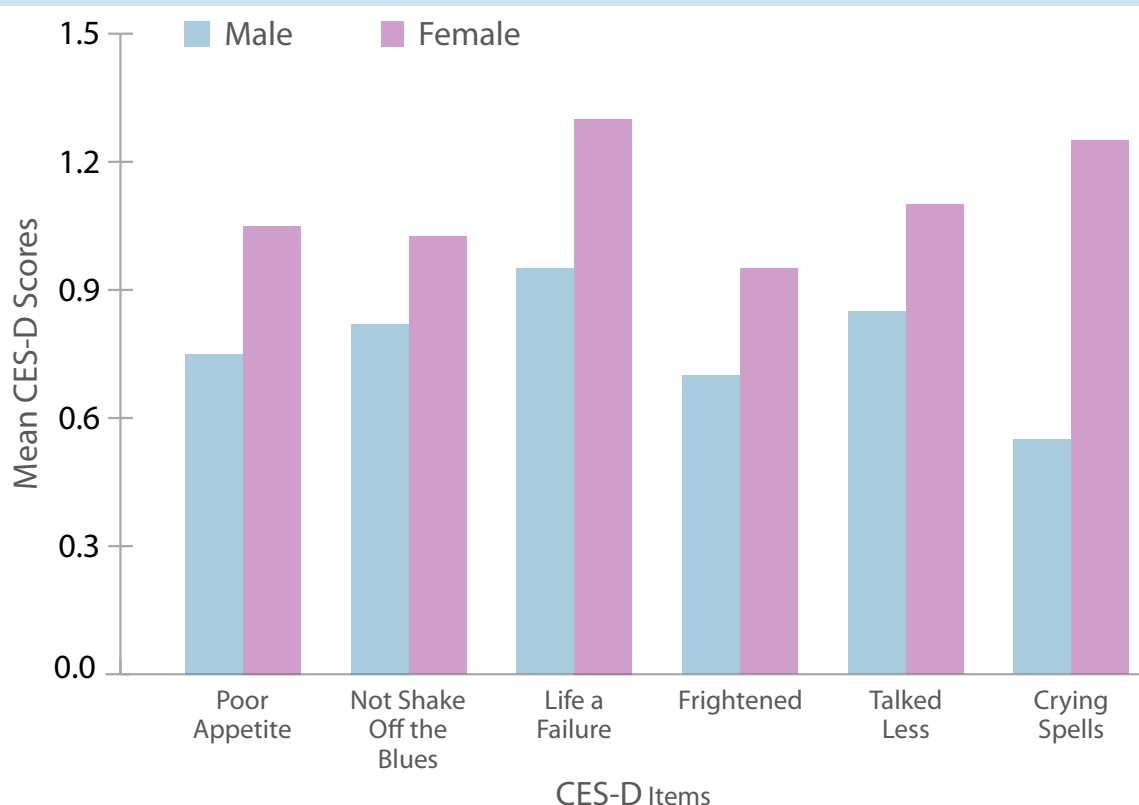
Total mean scores for depression were explained by the grouping variable 'NHS Board'. This meant that participants from NHS Forth Valley had significantly lower mean scores for depression compared with those from NHS Ayrshire & Arran, NHS Lanarkshire and NHS Lothian (Table 26).

Table 26: Depression scores: comparison by NHS Board

NHS Board	Mean Depression Scores	95% CI	F[df]	p
Ayrshire & Arran	23.82 ²	20.47, 27.19	6.34 [6, 555]	<0.001
Forth Valley	15.47 ¹	12.47, 18.25		
Greater Glasgow & Clyde	19.94 ^{1,2}	15.94, 23.96		
Highland	18.56 ^{1,2}	15.85, 21.27		
Lanarkshire	26.64 ²	23.38, 29.89		
Lothian	23.62 ²	20.71, 26.54		
Tayside	21.89 ^{1,2}	19.59, 24.19		

*The suffixes show the significant differences in mean depression scores which exist between NHS Boards

Figure 36: Comparison of depression individual item scores by gender



5.8 DISCUSSION

Demographic profile

This sample population would appear to be representative of people who may be categorised as homeless since they were similar in their demographic profile to other homeless groups residing in Scotland and Northern Ireland.[2, 33] Their health, health behaviours, oral health status, oral health attitudes and behaviours were also similar to other populations of homeless people across Europe.[4]

Health and health behaviours

In terms of health disparities, the homeless people in this sample had greater experience of physical ill-health in comparison to the general population. [6] This was reflected in the prescribed medication taken by 63% of the sample, and in that over 20% of the sample stated they suffered from chest disease, bleeding disorder and allergies. Smaller proportions stated they had heart disease and hypertension. Differences were noted between NHS Boards with regard to physical ill-health. It seemed that NHS Board areas with high levels of multiple deprivation[34] (e.g. NHS Greater Glasgow & Clyde) had the highest prevalence of hypertension, infections, bruising/bleeding disorders and diabetes. The degree of physical ill-health was reflected in the proportion of respondents who stated they were provided with medication for lung diseases (27%) and for heart disease (including blood pressure) (9%). This suggested that there were added ill-effects from being socially excluded and residing in NHS Boards recognised as areas of high social deprivation.

Health disparities were also reflected in the proportion of the sample population who took prescribed medication for mental ill-health. Eighteen percent of the entire homeless sample were taking prescribed anti-depressants; in contrast, an estimated 10.4% of the Scottish population make daily use of anti-depressant medication. [35] From the findings of the depression (CES-D) questionnaire, over 58% of the sample were characterised as being depressed. In 1993 Scott demonstrated that 'significant mental illness [was] present in 30%-50% of homeless [people]' thus supporting the findings here that 35% of the participants were prescribed psychotropic medication for mental ill-health.[19]

The prevalence of smoking in the homeless sample (85%) compares unfavourably with the Scottish population as a whole. In Scotland in 2008 the overall proportion of people who smoked cigarettes was 25.2%, which equated to 26% of the male Scottish population and 25% of the female Scottish population.[36] The proportion of men compared with women in the homeless sample who stated that they smoked tobacco varied with age and reflected the findings of the Scottish Household Survey of 2007-2008.[37] In general, more men in Scotland smoked, and as with the Smile4life survey, the highest proportions of smokers were men and were to be found in the 35-44 and 55+ age groups.

Thirty-one percent of the participants stated that they drank alcohol at least once a day. Older age groups, men (35%) compared with women (19%) and those from NHS Greater Glasgow & Clyde (26%) stated that they drank alcohol at least daily. These findings reflect the national figures with regard to alcohol consumption, where 35% of men and 26% of women in Scotland consumed alcohol in excess of the recommended number of units/week in 2009.[38]

Sixty-eight percent of the participants stated that they had used street drugs at some time in their lives, with 29% stating that they were current drug users (of which 24% were injecting drug users at the time of the survey). This finding compared unfavourably with Scotland as a whole where the prevalence of problematic drug use was estimated to be 1.84% in 2003 for people aged between 15 and 54 years of age.[39]

In conclusion, these findings support earlier work which has shown that the general health of homeless people is poor and their health behaviours are detrimental to health.[6]

Oral health and oral health behaviours

The oral health of this sample of homeless people was poor. When compared with the Scottish section of the Adult Dental Health Survey 1998,[5] this population of Scottish homeless people had fewer standing teeth, equivalent mean numbers of decayed and missing teeth but half the number of filled or restored teeth. The increased prevalence of decayed and missing teeth suggested that this population of homeless people attended for dental treatment only when experiencing pain. This was reflected in the wish of 79% of the sample to have a drop-in centre which could be easily accessed at times of need.

Differences in obvious decay experience varied with age and gender. Older homeless people had greater numbers of extracted teeth while younger homeless people had greater numbers of decayed teeth. Women compared with men had greater numbers of decayed but lower numbers of filled teeth. This is in contradiction to the findings of many oral health surveys, which suggest that women compared with men have greater experience of filled teeth. It has been suggested that this difference could be related to the women's experience of dental anxiety; this was reflected in the gender differences found in dental anxiety in this survey, and it was also noted in the comments of the participants.

The following is illustrative:

"I haven't been to a dentist in nearly 14 years, I am so scared of the pain and what you are going to do. I've had panic attacks on the way to the dentists before so I never got there. I've got that used to not looking after my teeth but for two weeks my bottom teeth have had pain so I have finally got the courage cos I don't want to lose what little teeth I have left"

Up to 4% of participants were noted to have suspicious oral lesions that required referral. This prevalence of oral lesions compares unfavourably with the settled Scottish population in which oral cancers are found in 1% of the population.[40]

The participants' oral hygiene was surprisingly good with plaque covering less than a third of the tooth surface. Similarly, only 46 people had no natural teeth (edentulous). One hundred and thirty-nine people stated that they wore dentures. The types of dentures worn were both complete and partial dentures. Over half of the dentures worn were felt to be clinically satisfactory. This was important as participants often felt shame and embarrassment caused by the appearance of their mouth and teeth, as one respondent commented:

"I would like new falsers so I can smile without having wrinkles on my face"

With regard to their experience of dental treatment, people who took part in the survey stated that they had had teeth extracted, and had experience of abscessed teeth as well as fillings. Thus the participants' experience of preventive oral health treatments was poor. This experience varied with age group; for example younger people have experience of fissure sealants, but in general the people who took part in the survey had little experience of fluoride treatments or even scale and polishes.

In conclusion, these findings support earlier work[10] which has shown that the oral health of homeless people is poor and reflects a pattern of irregular dental attendance associated with pain and discomfort.

Patient management complexity and attitudes to dental care

Fifty-eight percent of the sample were characterised as having at least one patient management complexity. The most frequent complexity was in relation to oral health. The findings showed a close relationship between obvious decay experience and patient management complexity while those participants characterised as having 'oral health risk factors' had greater numbers of decayed teeth and more plaque covering their teeth compared to the rest of the sample. It was interesting to note that participants with high dental anxiety status were those characterised as having moderate to severe difficulties regarding the patient management complexity 'ability to cope'.

Therefore participants with high scores for attitudes relating to anxiety as a barrier found it difficult to access dental care. This was particularly noticeable in female respondents. However, in general, participants felt that the attitude of dental health personnel made it difficult to access dental treatment.

In conclusion, participants with increased patient management complexity had greater experience of poorer oral health status and dental anxiety.

Psychosocial health

This population of people represents a group who are highly dentally anxious and who have a high prevalence of dental phobia. Over 20% of the sample were characterised as dentally phobic according to the Modified Dental Anxiety Scale (MDAS) measure. The most feared items of dental treatment were the local anaesthetic injection and the drill. This was reflected in the comments of one participant:

"When I go to the dentist I get panic attacks, sweat and shake. I hate injections in my mouth and would rather be put to sleep"

Interestingly women compared with men were more anxious of all aspects of dental treatment. Additionally, participants from the NHS Greater Glasgow & Clyde and NHS Tayside areas had greater experience of dental phobia compared with other NHS Boards.

The impacts upon oral health-related quality of life were greater in this population compared with the Scottish population in the 1998 Adult Dental Health Survey.[5] In particular, impacts in relation to psychological discomfort (feeling self-conscious about the appearance of teeth) and psychological disability (feeling embarrassed about the appearance of teeth) were experienced very often by 25% and 23% of the sample respectively. The following is illustrative:

"...very self-conscious of her appearance and feels that if she could get work carried out she would be able to improve her life"

As mentioned previously, this population represents a sample of people who have an increased experience of mental ill health, and this was demonstrated in the increased prevalence of depression in this group of homeless people. Women compared to men had poorer appetites, felt sad and frightened and felt that people disliked them. It may be that these feelings were linked to concerns about accessing dental treatment, so it is reasonable to suggest that depressive mood is an additional barrier to accessing dental care in this group of homeless people.

In conclusion, these findings show that people who are homeless have increased experience of dental anxiety, impacts of embarrassment and self-consciousness as well as depression. It is suggested that these psychosocial factors must be considered as additional barriers to accessing dental care when planning dental health services for homeless populations.



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Smile4life Qualitative Exploration

Qualitative exploration of homeless people's oral health concerns

6.0 SMILE4LIFE QUALITATIVE EXPLORATION

6.1 INTRODUCTION

The first part of this report was based on survey data and focused on the mouth and associated psycho-social factors. The second part, based on interview data, explores the social context of homelessness from the perspective of homeless people themselves.

6.2 METHOD

Research context and aim

Participants in this study were homeless people from the Scottish Health Board areas of NHS Forth Valley, NHS Greater Glasgow & Clyde, NHS Lothian, and NHS Tayside. The aim of the study was to use grounded theory procedures and techniques to analyse the qualitative data obtained from one-to-one interviews with homeless people. The interviews explored the main issues pertaining to the lives of homeless people, with regard to their oral health, general health and well-being, and their experiences of homelessness. The findings will provide an insight into, and thus foster an understanding of, the lives of Scottish homeless people and their oral health needs and concerns.

Grounded theory

Grounded theory, as developed by Glaser and Strauss,[41] is a research methodology that is applied to a substantive area in order to generate a conceptual theory that accounts for the patterns of behaviour within that area. It is a constant comparative method in which data is collected and analysed as part of a simultaneous process. The goal is to generate a theory 'grounded' within the context in which the research is conducted, and within the data itself. The research purpose of a grounded theory study is to a) identify the 'main concern' or issue/problem of the participants, and then b) identify a 'core category' that accounts for how this main concern is managed or resolved in terms of the variation in behavioural processes. Grounded theory methodology was selected for this study because it can be used to give meaning to the experiences of homeless people as they emerged from the detailed accounts of participants.

Sampling and participants

In qualitative data collection, the purpose is to identify a group of people who possess characteristics or lives relevant to the social phenomena being studied. Therefore, a non-probability convenience sample was gathered. Thirty-four participants were recruited via homeless clinics, homeless organisations, and a wider network of sources such as Big Issue distribution offices. Sampling took place between October 2008 and June 2009.

Ethical considerations

Ethical approval was obtained from the University of Dundee Research Ethics Committee (UREC 9005) (Appendix 6). Consent was sought from each of the participants prior to taking part in the interview. Data were anonymised.

Procedure

The interviews were carried out as part of the wider Smile4life study of the oral health of homeless populations in Scotland. The interviewer visited a variety of locations with prior arrangement. Homeless people were invited to take part in a one-to-one interview. The interviews varied in length from ten minutes to up to half an hour. The majority of the interviews were digitally audio recorded and transcribed; written notes were taken during those interviews where audio recordings were impossible for practical reasons, such as in noisy street settings.

The aim of the interviews was to identify the main concerns, problems and perceived barriers that exist to prevent homeless people achieving and maintaining good oral health and accessing oral health services. Interview topics included access to oral health services, dental anxiety, the appearance of mouth and teeth, and the impact of poor oral health on confidence, self-esteem and general well-being; other general health and psycho-social factors were explored as and when they arose at the instigation of interviewees. Where appropriate, interviewees were also asked to reflect on factors that led up to their becoming homeless, their experiences of homelessness and their hopes for the future.

Data analysis

The interview data, in the form of transcripts and field notes, was analysed using grounded theory techniques. The qualitative data was initially analysed using open coding. The transcripts and field notes were examined line-by-line to identify incidents, processes, actions and behaviours that could then be coded into higher-level categories and concepts in order to create an accurate conceptualization of the content of the data. Emerging ideas were recorded using memos, which facilitated the development of codes into higher level categories.

6.3 FINDINGS

Demographic profile of the sample

Thirty four homeless people took part. Twenty (59%) were male and 14 (41%) were female. The age span of the sample ranged from 16 to 70 years. The largest proportion was collected from the Glasgow area, making up 53% of the sample, followed by Edinburgh, Stirling and Dundee. The breakdown by location is shown in Table 27.

EMERGING FINDINGS: THE MAIN CONCERN AND CORE CATEGORY

Reclaiming life – the main concern

The main concern that emerged from the qualitative data was ‘reclaiming life’. Reclaiming is situated within the context of loss, which was a strong and recurrent theme, and applied not only to teeth or dentures, but to home, family, health, personal identity and a place in society. Loss was particularly pertinent to those who were affected by drug or alcohol misuse. Some people became trapped or lost within the identity of ‘homeless person’ or ‘drug user’, an identity pervaded by the experience of loss, where an over-reliance on homeless services or prolonged substance misuse cushioned them from the harsh reality of taking responsibility for themselves and their behaviour. Others, however, were able to address and confront their sense of loss in order to move on and out of homelessness.

Other commonalities across the data included the need to seek safety or comfort, which was often achieved by re-establishing normal daily routines, forming part of the reclaiming process. In essence, the process of reclaiming life centred on the rejection of the ‘homeless identity’ and the reclamation of individual self-identity.

However, reclaiming life was not attainable for all, and many homeless people moved in and out of the reclaiming process, for example those who were given a flat but were unable to maintain their tenancy, or those who entered rehabilitation but ended up relapsing back into drug use. Various factors affected the ability to reclaim life – age, the length of time an individual had been homeless, the severity and depth of the loss experienced, individual resilience and the ability to cope with loss.

Table 27: Participants by sampling location

Location	Number of participants	Participant characteristics
Glasgow	18	Homeless dental patients Homeless people accessing dedicated homeless services Big Issue street vendors
Edinburgh	9	Homeless people accessing homeless health services Big Issue street vendors
Stirling	5	Homeless young people in temporary accommodation
Dundee	2	Homeless people in temporary hostel accommodation

Short-term and long-term prioritising – the core category

Homeless people managed the process of reclaiming life in two main ways – short-term prioritising and long-term prioritising. These strategies accounted for the majority of variation in behaviour.

Short-term prioritising, was pervaded by a sense of loss, and involved maintaining the homeless identity and lifestyle, which in turn reinforced the sense of worthlessness and loss. This was linked to a lack of resilience to cope with the experience of loss. Often the sense of loss was too great, and was managed by drug [mis]use, which was used to cushion the sense of loss. Those who were not yet at the stage where they were fully ready to reclaim their lives exhibited examples of short-term prioritising, which included taking street drugs or drinking to excess, and neglecting their health. This extended to normalising negative circumstances, and placing themselves in potentially unsafe or threatening situations. The threat of violence was particularly acute for those who presented themselves as the visible face of homelessness on the streets, such as Big Issue vendors, for whom violent attacks were not uncommon.

Long-term prioritising, on the other hand, involved taking responsibility for oneself and rejecting the homeless identity. This allowed homeless people to begin to reclaim their lives. Positive behaviours with longer-term goals took precedence, such as participating in a drug treatment programme, seeking a place on a college or training course, taking part in physical activity, or reducing alcohol intake. Resuming responsibility for health and self-care was part of this process. Many of the younger homeless people displayed greater resilience than those who had been homeless for longer periods.

Many long-term prioritising participants described past instances of short-term prioritising, particularly those for whom substance misuse had led to ‘lost lives’. Drug addiction maintained the homeless identity and with it came the loss of life chances. For example, one man described how he became trapped within the identity of a homeless drug user when he began using drugs in his late teens; he did not begin to reclaim his life until his mid-thirties when he stopped using drugs and eventually found his first home. Others began using substances as a reaction to extreme or violent loss, such as the murder of a parent at the age of 19 for one woman who later became a heroin addict. The potential for a ‘lost life’ seemed particularly acute for those who had experienced trauma in their formative years, which for some, led to a repetitive, hard to break cycle of homelessness and substance misuse.

For many homeless people, the process of reclaiming life consists of a mix of both short-term and long-term behaviours until the individual reaches a point where the long-term prioritising becomes consistent and is maintained. Therefore a short-term to long-term continuum of prioritising emerged to account for the majority of the variation in the behaviours of homeless people who were attempting to reclaim their lives.

The following sections take the reader on a journey through homelessness, from the downward spiral into homelessness and the formation of the homeless identity, to the point of reclaiming life.

6.4 SHORT-TERM PRIORITISING

Short-term prioritising: becoming homeless and the formation of the homeless identity

Interviewees discussed the circumstances surrounding becoming homeless. For many of the younger people, becoming homeless often arose from the breakdown of familial relationships:

"Just didn't get on with my mum [...] I moved out, at the time I was quite wild" (F1, 17)

Not only does this involve the loss of a roof over one's head, but also the support and inclusion that comes from being part of a family unit. Although many interviewees used the language of choice to describe their decision to leave the family home, it was clear that their 'choice' was far from straightforward, as summed up by one teenager:

"I wasn't getting on with my mum and dad at home, it was just becoming too much, so I took it...it was my decision to walk out but basically they left me with that decision, like I couldn't have stayed there any longer, it was impossible to stay with them" (F2, 17)

It seemed, however, that many of these young people were in fact ambivalent about leaving home. They could not decide on the best course of action and became stuck in a 'revolving door' phase where they moved back and forward between the parental home, the homes of relatives and the homes of friends before gradually descending into a homelessness state:

"My mum and dad got divorced and my mum got back with my real dad, and we just didn't like each other...they threw me out then they took me back, they threw me out, then they took me back, I was pregnant, so I left" (F, 21)

"I moved into my gran's when I was 15 and moved back to my mum's and then I moved out and became homeless, so I was in a B&B and then I got put in [temporary accommodation]... I wish I was still back at my mum's, but I couldn't go back, I want to but I couldn't go back now" (F1, 17)

It was during the 'revolving door' phase that the roots of the 'homeless identity' were gradually established. The homeless identity was slowly accepted as inevitable, as separation and loss of family ties became a reality. One interviewee described herself, in terms of her self-identity, as an isolated homeless person who had been a difficult child and who had now severed links with her family:

"I've always been the black sheep [...] I'm just used to being on my own now" (F, 23)

The homeless way of life, although not actively chosen, thus became characterised by the adoption of an alternative existence peppered with loss and separation, in which substance misuse was used as an analgesic to deaden the pain of isolation. Thus, drug or alcohol dependency and homelessness were interlinked. For many people this led to the formation of a homeless identity, which included rejection of one's 'old life', and the adoption of what appeared to be a highly chaotic lifestyle. Substance misuse, a behaviour characteristic of short-term prioritising, featured in the life history of many of the interviewees. For some people, it appeared that drugs were used to fill the emotional void created by the loss of family relationships:

"There was a big family breakdown, I just ended up moving out, I was about 15, I just got involved with the wrong crowd, started taking drugs and stuff. The worst thing about being homeless? Getting into the drugs" (M, 24, homeless for 8 years, methadone user and recently housed)

One interviewee, a former heroin addict, started using drugs as a way to cope with the violent loss of a parent:

"My dad got murdered when I was 19, so I was with this boy and that's how I ended up getting into drugs" (F, 32)

Drugs were thus a high risk factor for young, recently homeless people, which could lead into dangerous situations:

"You're going into the unknown, you'll do anything" (F, 21, former drug user)

Crime and prison, for instance, were linked to homelessness and drug use. One man described how his heroin dependency began while in custody:

"I started in prison, started taking it in there, I liked it, came out here and got a habit...I was 17, so that's eight years I've been on and off" (M, 25)

For this particular interviewee and many others, although drug use started in response to a traumatic experience or getting involved with the 'wrong crowd', it often became a way of life that persisted for many years, in tandem with cycles of homelessness, prison, rehabilitation and relapse.

Short-term prioritising and maintaining the homeless identity

Short-term prioritising was centred on maintaining the homeless identity, which in turn reinforced the sense of loss and worthlessness experienced by many homeless people. For some, short-term prioritising was characterised by a strong sense of loss, linked to a lack of resilience to cope with the experience of emotional isolation. Often the experience of isolation was too great for some and was therefore managed by substance misuse, in order to cushion the sense of loss and blunt the feelings of depression associated with it. Heroin in particular was used as an emotional anaesthetic, allowing the user to feel no emotional pain.

Some people became trapped or lost within the identity of 'homeless person' or 'drug user', which after a prolonged period of time was perceived to be the only option or way of life available to them. In reality, this meant that factors such as social marginalisation, an over-reliance on homeless services and prolonged substance dependency prevented them from taking responsibility for their oral health. This supports the findings of a US study of homelessness and identity, which found that those who strongly identified as homeless were less likely to make attempts to move out of homelessness.[42]

The maintenance of the homeless identity was also characterised by self-neglect. Older homeless people in particular exhibited early onset and thus chronic health problems as a result of years of drinking, drug abuse and self-neglect. Such problems were also seen in younger homeless people. The following is illustrative:

"I've got a blood clot on my leg, both legs in fact, from drug use, the right leg is actually worse, it's permanent damage" (M, 28)

Consequently, some people were unable to change their behaviour, such as the 43 year-old former drug user who had suffered a stroke at the age of 39; although he described it as a 'wake-up call', he continued to drink heavily.

Self-destructive behaviour was common, and reflected perceptions of low self-worth. For those who were attempting rehabilitation, the potential for self-destructive behaviours was apparent; for instance, one man who had been on a methadone programme described how his ill-thought actions based on the need for a 'quick fix' had led to his removal from the programme and the curtailment of his methadone prescription:

"I've just been cut off my prescription, I was on the methadone programme... I was giving clean samples for twelve months, then I gave one dirty sample for valium, I bought [the valium] off the street, and I got cut off for it...I've not took heroin for twelve months now and they've cut me off because I took valium, I thought I would've got help with my valium but I got no help...I'm having to take heroin every day to keep me going...I want to get back on it, the methadone kept me out of jail cos I wasn't committing crime" (M, 25)

This action placed him back into a further 'revolving door' phase, in and out of drug abuse, and in and out of rehabilitation. As a consequence of his removal from the methadone programme, he had found himself in a potentially dangerous situation with a risk of criminality to support his drug habit, with the possible risk of a prison sentence. Therefore, in a phase of self-destructiveness, the homeless person is trapped in a world in which the need for a 'quick fix' becomes paramount, resulting in emotional and physical dangers.

Short-term prioritising and oral health

Self-neglect extended to oral health. Many people either did not or could not practice preventive oral health measures. Interviewees spoke about the practical difficulties of maintaining an oral hygiene routine while homeless:

"It was difficult then, cos there was nowhere to go to actually brush your teeth in the morning...I did try and brush my teeth as often as I could, but when you're sleeping rough, it's quite hard" (M, 24)

Moreover, the apparently chaotic and even dangerous lifestyle of some homeless people made it difficult to manage their oral health in the face of numerous setbacks, as illustrated by:

"I got dentures and then I got attacked in the town, and they were all smashed up. I made an appointment with the dentist again, I had an appointment for the Tuesday and I got the jail on the Sunday" (M, 35)

Drug and alcohol drug addiction therefore led to self-neglect, where oral self-care, for example, was a very low priority:

"I had so many other priorities in front of that, before I would get to cleaning my teeth, and then it would be maybe three days later when you've like, a layer of scum on them, that would make you physically sick, and that's how long it would go sometimes" (F, 43)

Another interviewee, a former heroin user, described a history of short-term prioritising where obtaining drugs remained uppermost, and was prioritised over and above all other emotional and physical needs:

"All I was interested in was getting my drugs, that was my main priority, teeth were the last thing I ever thought about, until I got toothache...when I was eating, bits of them were breaking off, so the ones I had left were getting really bad...when I was mad with it I just didn't care whether I had them or not" (M, 35)

Consequently, among substance misusers poor oral health was accepted as the norm, as the following comment illustrates:

"I used to get people saying, you know, how've you still got your teeth?...it's not the norm...addicts, especially long term addicts, don't have their teeth, it goes along with the occupation if you like, bad diet, not caring for yourself, not looking after yourself, and teeth seem to be one of the first to go" (F, 43)

This suggests that the perception that homeless people are not interested in their oral health should be re-considered. It is not that their teeth are unimportant; it is rather that they are of such a low priority that they are ignored until pain becomes unbearable.

Short-term prioritising: dental registration and attendance

Dental registration and attendance was therefore characterised by a mixture of short-term and long-term prioritising, which was dependent on the urgency of the homeless person's need:

"It might have been as much as 10 years [since last dental visit]...I would get a bit of toothache but would just have to live with it...they were probably pretty brown, cos of smoking and general lifestyle choices, I was getting a lot of intermittent pain... I suppose it was just another issue that I just wasn't dealing with...but if you don't feel very good about yourself, you've not got it together to get a dentist" (M, 36)

Many of the interviewees had been registered with a dentist at some point in their lives, but few were currently registered. For example, only one of the eleven Big Issue sellers interviewed was registered with a dentist at the time of interview. Some interviewees reported relatively recent registration, but because they had not attended in some time, they did not know whether or not they were still registered. Others reported going back to their dentist and being told they had been removed from the register because so much time had elapsed since they had last attended.

Among those who were registered with a dentist, missed appointments were common, partly due to the unstructured lifestyles and competing priorities of many homeless people. One interviewee was able to long-term prioritise by making dental appointments, but was unable to maintain his positive behaviour by attending these appointments:

"I booked an appointment on the Tuesday, I missed my appointment, I was five minutes late, so I got another appointment for the following Tuesday which is tomorrow – no, today, missed it again, shit, quarter to two I was meant to be there, know what, I'm going to have to go to another dentist, I was meant to be there today at quarter to two, I'm thinking this was Monday, but it's Tuesday" (M, 25)

The financial penalty of such missed appointments was keenly felt and was perceived as a problem when accessing dental care:

"I'll have a fine cos I missed my appointment. It was about two months ago...I can't afford to pay it, cos I'm on benefits and I only get like £47 a week... it's just I really have to pay this fine...it's hard to find a dentist" (F1, 17)

When fines for missed appointments were imposed, often homeless people opted not to return to their dentist, thus making it difficult to maintain a long-term prioritising routine in relation to their dental care:

"They wouldn't give me another appointment unless I paid £30, which I didn't have so, I just didn't bother going back to them" (M, 35)

Young homeless people in particular had difficulties accessing dental services, often coming straight from the family home where a parent had arranged dental appointments for them:

"At home I did have a dentist, I don't know if I'm still registered...but I've not had an appointment in ages. I had to go to Falkirk Royal to get a tooth out cos I had severe toothache for like three months or something, had to go to get a tooth out there, I've not been back to the dentist since like...I don't even know how to register, I don't even know how to go about it" (F2, 17)

While the inability of younger people to access dental services could be understood in terms of the lack of parental assistance, the same was not so for older people in the sample. For some of the homeless adults, it seemed that they had not fully developed the necessary personal and social skills and so remained at a loss when attempting to access health care or interact with health professionals. This was particularly evident in those whose long-term drug use had begun in adolescence. Hence, within the scenario of self-care, some homeless people were unable to take the necessary steps to access health care, reflecting difficulties with regard to interpersonal skills for health.

As a result, some homeless people simply did not feel it was necessary to visit a dentist, even for a check-up, if they were not experiencing any problems with their teeth. One female in her late 50s, who had worn the same set of dentures for 30 years and was aware she needed new ones, was not registered with a dentist. She did not see the point as she had 'no teeth'. She recalled going to a dentist at one point to get new dentures, but the impression made her sick, and she decided not to go back. The following quote sums up the position that many homeless people take regarding dental visits:

"I only go to the dentist when I need to, I need to go the now, but I'm not in any pain, so I don't bother" (M, 50)

Others were held back by fear, even though they needed or wanted treatment:

"I've been scared of needles for a long time so I never went to the dentist, but my teeth were really bad...[I felt] disgusted...cos I'd left them that long, and just to have nice teeth...I was talking to people and covering my mouth" (F, 32)

In contrast, some people required the ‘quick fix’ of emergency treatment when in pain:

“I had toothache for days and days, and I says, I’m gonna have to go, gonna have to go, gonna have to go, and it took us about four days to say right, I’m going [to the dental hospital]. They [the two teeth] had holes in them, and the holes were that big, they said there’s no point in filling them, we could fill them if you want but I says no, just take them out, I just want them out, so they took them out” (M, 25)

Yet the desire for the quick fix often led to regret later on:

“They were pretty bad, I went to the dentist and asked her to take them all out, what I had left, I only had about 5 left anyway...for what I had left there wasn’t much point in keeping them...I had toothache, I thought I’ll get them all out and that’ll be... I wish I’d never done it” (M, 35)

Frustration arose when the required emergency treatment was not immediately available. This suggests that drop-in services are suited to the needs of this population, making a dental service available at the point at which the positive step is taken:

“It used to be when I made appointments with the dentist, can’t give you an appointment for two weeks, I was like, pain will be away by then, what’s the point, just leave it” (M, 35)

These findings show that short-term prioritising is incorporated into the process of accessing dental care. When severe pain is experienced, teeth are no longer a low priority and a emergency treatment, usually an extraction, is required, but this often leads to regret later on. Reflecting the findings of Finch et al[43], this illustrates that particular barriers to care do exist for this group. Consequently, various factors should be taken into account when giving treatment to homeless patients, such as whether or not the person is a drug user, concerns about ability to attend and cost, fear, and previous negative experiences with health professionals.

6.5 LONG-TERM PRIORITISING

Long-term prioritising: the rejection of the homeless identity and reclaiming life

Reclaiming life through long-term prioritising involved taking responsibility for oneself and rejecting the homeless identity. This often coincided with drug or alcohol rehabilitation and the fresh perspective gained from ‘being clean’, coupled with the knowledge that the individual must actively play a part in facilitating his or her recovery. In some instances, the need to reclaim life stemmed from a major health scare (a ‘wake-up’ call) or a period of hospitalisation, which prompted a re-evaluation of circumstances. Others were encouraged to make changes to their lives by key workers, hostel staff, public health nurses and other professionals; this often occurred in the case of individuals with multiple problems, when addressing the most acute issues kick-started the whole process.

Hence, homeless people started to come out of the ‘revolving door’ phase; this allowed them to begin to reclaim their lives and rebuild a positive self-identity, which was accompanied by regaining a sense of self-worth, with the aim of playing a meaningful part in society. This process was not always easy, and in some cases took years, often in a series of small steps, but ongoing support was available to many, and success often depended on the ability of the individual to face up to the past and address his or her issues surrounding their experiences of loss, trauma and/or addiction. Part of this involved no longer perceiving oneself as a ‘homeless person’; therefore homelessness (and a one-dimensional homeless identity) was no longer central to defining one’s identity. This depended on completely changing one’s way of life by gradually disassociating with homelessness, often one step at a time, by making new friends or participating in new activities.

Many of the younger homeless people displayed greater levels of resilience than those who were older or who had been homeless for longer periods. For a few however, decades of substance misuse resulted in ‘lost lives’. Life would not be reclaimed until difficult decisions were made, safety sought and addictions overcome:

“I chose to be homeless, I’m a recovering addict, and the area I was born and brought up in, I felt that, after going through long-term rehab, would be detrimental to my recovery, so through choice I gave up my home, and chose to go to supported accommodation, which is for recovering addicts and alcoholics...it was my choice to become homeless, although I wasn’t putting myself on the street, I was putting myself in a safe environment” (F, 43)

At this stage, positive behaviours with longer-term goals took priority, such as taking part in a methadone programme, seeking a place on a college or training course, taking part in physical activity, or reducing alcohol intake. Resuming responsibility for self-care was part of this process. Motivation stemmed from a genuine desire to move out of homelessness. It appeared as if they were creating a positive, supporting environment for themselves, by actively seeking support. Such support would be found by enlisting the help of a 'key worker' or hostel staff, or by approaching homeless services or other places where assistance would be available.

Making positive lifestyle choices

Homeless people in the reclaiming phase were able to demonstrate the positive lifestyle choices they were making while taking control of their own lives. This meant that they were no longer ambivalent, and many showed that they really wanted to make changes to their lives. Part of this involved seeking safety in newly re-established daily routines such as toothbrushing, eating regular meals or getting up early in the morning:

"Since I've been in the hostel I've had a lot of help, I've come off the drink. I feel a lot better, healthier, like I'm up at the crack of dawn, 7 o'clock every morning, it's just a routine you get into. I've been off the drink now for 3 weeks, I've even got my own drink diary... and I'm doing a course just now, computing, helps you back into work, I started it last week, it's good...and I play football, every Sunday, I started off a 5-a-side tournament in the hostel for the rest of the hostels in Edinburgh" (M, 45)

For substance misusers, this meant establishing new, healthy routines, in contrast to the 'addict routines' that tend to characterise their lives as drug users.[44] For some people, this involved swapping negative practices for behaviours that were perceived as less harmful, again a method of taking control:

"I eat a lot of sugar as well, which is a problem, cakes, when I'm trying to stay off drugs I eat more, I switch my habit onto, instead of heroin it's apple pies, tarts or something like that" (M, 28)

This man may not have been able to give up his 'habit' completely, but by switching its focus from drugs to cakes he was able to exert some control over it in a positive way. Small changes such as this gave way to improved self-esteem and helped to create a renewed sense of self-worth.

Mental health, well-being and seeking safety

Some interviewees spoke candidly about their mental health and well-being, again from the positive perspective of taking control:

"I had an abortion, last year, and I just...got put on anti-depressants, and my boyfriend was..I found out he was taking heroin, then not long ago I found out he was injecting, so I feel like I've got the whole weight on my shoulders...the doctor did put me on anti-depressants, but... after a while I didn't want my life to become... just making me feel better after this one wee tablet so I never took them and I started seeing a counsellor" (F2, 17)

However, it is important to recognise the impact that homelessness had on mental health, and the resilience that was required in order to recognise psychological difficulties and move forward:

"I've went through it, I've got mental health problems and stuff, I think if you get put in certain places, you can hit rock bottom" (F, 23)

The internal feeling of 'hitting rock bottom' and being unsafe tended to shift when people starting long-term prioritising. This enabled them to seek external safety, as finding a place of safety was important for individual well-being and reclaiming their identity. For example, the place of safety for many drug users was likely to be a residential treatment facility. Finding a safe environment was particularly important to homeless women:

"I always try and get them to put you somewhere that you feel safe, not just cos they want to put you there [...] you don't want to go somewhere that you don't know and you don't feel safe in, they've got a duty to make you safe" (F, 23)

Reclaiming relationships with family

The 'reclaiming' process also extended to family relationships damaged by breakdown and separation. Some of the young people interviewed had recently resumed contact with their parents and siblings after a period of separation, which often involved coming to terms with their self-identity and their role within the family, and thus renewing family bonds:

"I see [my mum] quite a lot now, first when I moved out I never really saw her a lot but now we've got a really good relationship, better than what I had when I was in there" (F1, 17)

"I get on with them a lot better now that I've moved out but it just wasn't working staying in the house" (F2, 17)

As families were 'reclaimed', the sense of loss was mitigated, therefore the need to anaesthetise this feeling of isolation with substances was reduced. Others however, did not resume contact with their families so had adapted to being on their own by drawing on their inner resilience, and/or creating their own support networks consisting of friends, partners or key workers. As individuals attempt to move out of homelessness and establish their non-homeless identity, the need for wider social interaction (not just limited to other homeless people and support staff) becomes paramount.

Long-term prioritising and oral health

Re-establishing contact with health services was often part of the process of overcoming addiction and accepting responsibility for the self-neglect that had occurred during the period of addiction or 'lost life':

"Now that I'm not using anymore, it's time to get my teeth back...I just didn't care...they were pretty bad, I went to the dentist and asked for her to take them all out, I only had about 5 left anyway, for what I had left there wasn't much point in keeping them...I had toothache, I thought I'll get them all out, I wish I'd never done it" (M, 35)

Other people accessed services in order to seek out information in an attempt to address and mitigate their oral health problems:

"I've been back on methadone for 6 months and its rotting my teeth...when I went to the emergency place I got a lot of information on what toothpaste I should be using, what brushes, getting toothpaste and rubbing it over my teeth, stuff like that. I think brushing your teeth before methadone is the probably the number one golden rule to preserve your teeth as long as you can, cos methadone's like a syrup, it slips off your teeth more if you brush them before" (M, 28)

Some of the interviewees had accessed homeless dental services in Glasgow and Edinburgh. It was a very big step for them to resume dental treatment after years of non-attendance:

"It's a big step, to go to a dentist, because it's embarrassing the mess you've made, I know I'm embarrassed with the mess of my teeth. You go into a dentist and you've got that, my goodness, the state of my mouth, what a mess it's in, you know, I could've done better" (F, 43)

Some homeless people, particularly those with many missing teeth, were motivated to seek out dental treatment because they felt self-conscious about their appearance:

"When they told me about this [the homeless dental clinic], I'd stopped using, you know...I just started thinking, when I was in the town talking to people, I was hiding my mouth getting embarrassed...kidding on I'm scratching my nose to hide my mouth...so phone up here for an appointment, thought they'd tell me to go back to my old dentist, but they've been alright" (M, 35)

Some of the Big Issue vendors in particular were self-conscious about the appearance of their mouths and teeth, as they felt it impacted on the way that they interacted with their customers, especially when it came to smiling and laughing. For others, there was concern about 'looking like a drug user', an issue for those who wanted to go back into the job market. In general, it seemed that the appearance of the mouth and teeth had a major impact on the confidence and self-esteem of homeless people, particularly those emerging from a long period of homelessness or substance misuse:

"When I first got clean, you know like your self-esteem is low and you're looking in the mirror and you're seeing bad teeth, it's not exactly the best thing for lifting that self-esteem to give you a bit of confidence and...but once I got my teeth sorted, you know, I felt better myself and it did lift my self-esteem a lot, and boosted my confidence, I wasn't self-conscious about smiling anymore" (F, 43)

In the main, however, resuming dental attendance after a long period of non-attendance occurred when homeless people reached a turning point where they began to confront all the negative issues in their lives, not just those related to their oral health:

"it wasn't until I started to address a lot of other life issues, that I started even thinking about getting a dentist, I was prepared to go and register with somebody else when I found out about the homeless dentist" (M, 36)

Health services aimed specifically at homeless people provided a safe environment which was in effect a 'comfort zone'. They offered their patients the opportunity to form trusting relationships with health professionals without barriers such as the fear of judgement or stigma, thus developing mutually trusting networks and building their own social capital. This is illustrated by the following quote:

"Coming here, as soon as I say I'm from [homeless resettlement unit], the dental staff know that I'm homeless, I'm a recovering addict or a recovering alcoholic, whatever, so right away, for me, I feel comfortable, I feel instantly comfortable...it's that stigma that goes all around addiction, homelessness, and probably a big one's that fear of being judged and stuff like that, but when I first came here, I didn't feel any of that whatsoever, because I knew that the dentist knew where I was coming from, so that stigma was kind of taken away from me when I walked in the door, I didn't need to worry about that because they already knew" (F, 43)

Uptake of such specialist services was a stepping stone for many homeless people as they began to re-integrate themselves into society, ideally followed by a gradual withdrawal from homeless services and a corresponding move towards the engaging with mainstream services.

6.6 Conclusion: managing and maintaining the reclaiming process

The reclaiming process consists of a mix of both short-term and long-term behaviours until the individual reaches a point where the long-term prioritising becomes consistent and is maintained. However, reclaiming life was not attainable for all, and many homeless people moved in and out of the reclaiming process on a regular basis. Those who moved in and out of homelessness and prison, or who entered rehab but later resumed substance misuse, or who were rehoused but were unable to maintain their tenancy due to their chaotic lifestyle or lack of support, were all examples of people whose complex and multiple problems may not have been fully addressed, and accordingly, they 'fell off the wagon':

"I had a house for a short time, sort of on and off, but through drug problems and stuff I've been put back on the streets...drug problems, heroin...I'm getting better, but I always get so far and then get knocked back" (M, 28, couch surfer for 6 years and methadone user)

"I got my first flat [after becoming homeless at 16] and basically you were just flung in there and that was it, just deal with it, I think that's how I mucked it up, I got a two bedroom flat and I never had any help, didn't know...mostly things like bills, how you go about certain things...I lost that through rent arrears" (F, 23)

Various factors affected the ability to reclaim life. Both the age of an individual and the length of time he or she had been homeless were often key to a successful reclamation process – younger homeless people or those who had been homeless for a relatively short time showed greater resilience and determination to move forward with their lives, as the homeless identity was often not deep-rooted at this point. This also applied to the homeless people who were not dependent on drugs or alcohol; those who were faced a greater struggle to conquer both homelessness and addiction. The extent of the loss experienced, the age at which it was experienced at, and individual resilience also impacted on the ability to reclaim lost lives and self-identity.



Recommendations

7.0 RECOMMENDATIONS

In line with the aims of this research, the findings from the quantitative survey and the qualitative exploration will be utilised to provide recommendations to promote oral health and to increase access to oral health care in homeless populations across Scotland.

7.1 Recommendation 1: Participatory, 'bottom-up' and sustainable approach

'It became clear that the users want to be involved. They wish to take responsibility for their own lives, and because they have extensive knowledge of the structures behind homelessness, they wish to be included in processes on a political level too; let homeless people be part of solving homelessness'. [45]

The importance of adopting a participatory approach cannot be overstated. The above quote illustrates and reflects the findings of the qualitative exploration of people 'experiencing homelessness'. It is by listening to homeless people and including them in the process when developing and implementing homeless services or initiatives that their needs and motivations can be fully understood and taken into account when planning acceptable, appropriate and affordable dental services and oral health promotion interventions. Therefore, the unique perspective offered by the homeless people who participated in the Smile4life qualitative exploration must be used to inform the development and implementation of future oral health services aimed at this population.

This programme of work has highlighted first, the need to understand the appropriate indicators of health and secondly, people's main concerns and the behaviours they use to solve their main concerns regarding the experience of homelessness. This provides the ground work to develop an oral health promotion programme based on the needs of people experiencing varying degrees of homelessness, material and psychological deprivation. It is by working from the perspective of the homeless individual that appropriate, acceptable and accessible oral health care may be achieved. Using a bottom-up approach, oral health self-care may become established/re-established within the health repertoire – becoming 'normalised' – thus assisting in the promotion of self-esteem and psycho-social wellbeing in those experiencing homelessness.

Further, it is recommended that a sustainable approach should be adopted to promote oral health and enable accessible oral health care for homeless populations across Scotland: 'Three elements create a genuinely sustainable approach to tackling homelessness leading to sustainable solutions'. They are: 'adequate funding is crucial for any long-term strategy to tackle and end homelessness; political commitment at all levels (national, regional, local); public support generated through information and awareness campaigns'. [46]

Therefore we recommend that a participatory, bottom-up and sustainable approach should be adopted to enable dental service and oral health promotion strategies to be developed which are acceptable and appropriate to people experiencing homelessness. Using this approach will promote 'interactional workability' [47] and will allow cooperation, shared meanings and concerns as well as goal setting together with appropriate outcomes to be realised.

7.2 Recommendation 2: Role and remit of NHS

- (a) **Provision of services and access to care:** The survey highlighted that 48% of homeless people find NHS dental care difficult to find. Therefore it is recommended that the comprehensive, three-tier model of dental services as outlined in Recommendation 3 be available to homeless people in each NHS Board area in Scotland.
- (b) **Dental treatment:** the survey highlights a lower prevalence of filled or restored teeth among the homeless sample in comparison to the general Scottish population. This is supported by the qualitative evidence which highlighted the reliance of many homeless people on emergency dental treatment. We take the view that patient choice and restorative treatment (e.g. fillings) are rights that should be enjoyed by all dental patients regardless of personal circumstances. Therefore we recommend that preventive and restorative dental treatments be made routinely available to homeless people accessing NHS dental care.

7.3 Recommendation 3: Dental services for homeless people

The findings of the survey and qualitative study point to a clear need for a comprehensive dental service for homeless people consisting of three 'tiers' of service:

- (1) Emergency dental services;
- (2) Adhoc or one-off 'occasional' single-item treatments that can be accessed without the need to attend for a full course of treatment;
- (3) Routine dental care/full course of treatment.

The need for a three-tier, yet fully comprehensive dental service is strongly supported by the survey findings. Further, many homeless people find it difficult to access and afford dental care, necessitating the need to provide emergency services for those unable to take advantage of routine dental care. The qualitative findings suggested that homeless people who predominantly solved their difficulties using a short-term approach are more likely to access emergency services as needed, as it is highly unlikely that they will be prepared to attend dental appointments or undertake a course of treatment. However, those who occasionally long-term prioritise may be more likely to attend a one-off appointment for single

item treatment, suggesting the need for 'occasional treatments' for homeless people, where a course of treatment or further attendance requirements are not imposed on the patient. In contrast, homeless people who are able to maintain a phase of long-term prioritising have a much greater likelihood of successfully completing a full course of dental treatment and/or adopting a preventive oral hygiene routine.

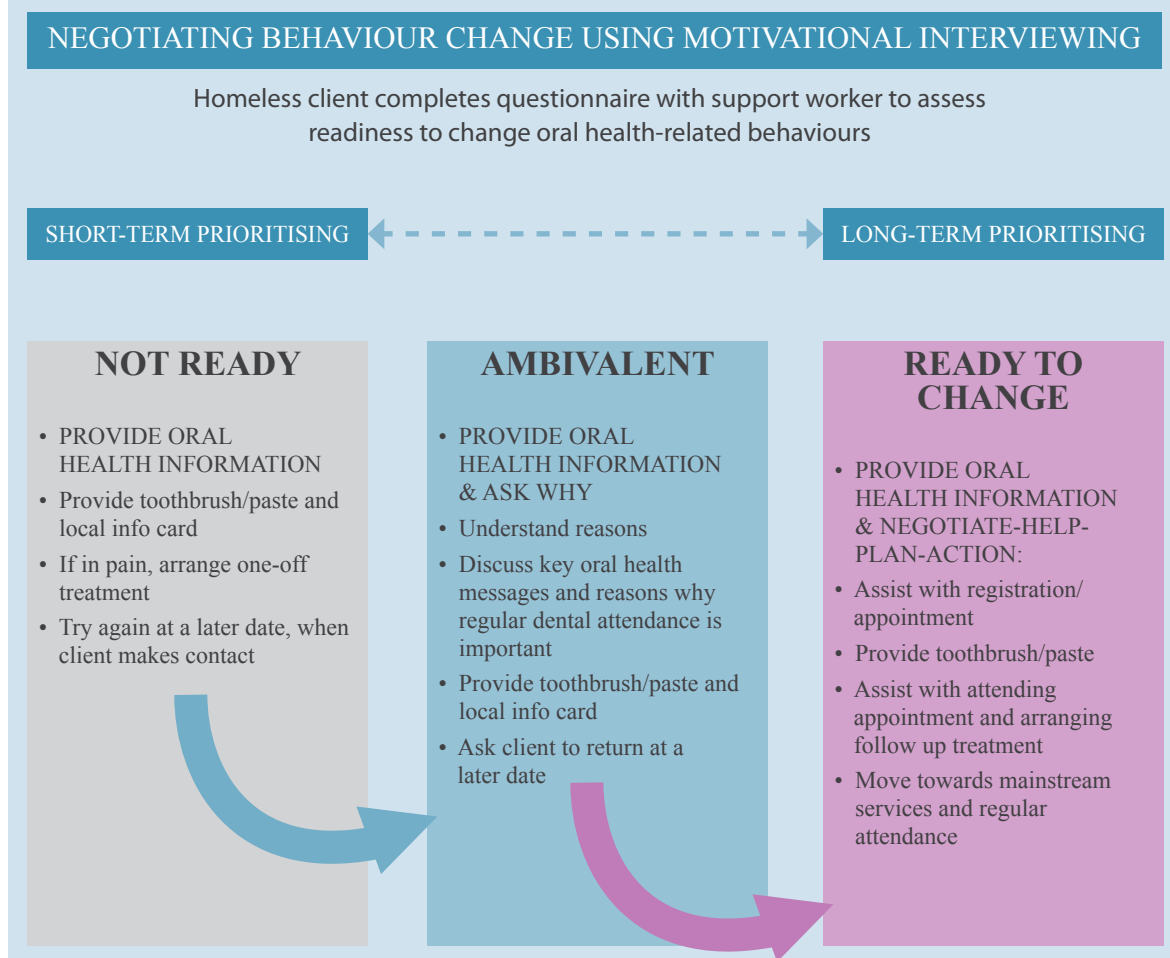
The available evidence suggests that there is a need to identify those homeless people wishing to access emergency dental services, those who require one-off treatments, and those who wish to access routine dental care. An oral health intervention designed to identify the differing oral health needs of homeless people is outlined in Figure 37.

7.4 Recommendation 4: Oral health promotion for homeless people

The data from the Smile4life survey has provided a series of appropriate health, oral health and psycho-social indicators, while demonstrating the need for a common risk factor approach to promote oral health in this excluded population. Using a common risk factor approach will allow the promotion of oral health for homeless people to be integrated into national health and homelessness strategies and policies, and be implemented at the local and agency level.

- (a) **National level:** the promotion and improvement of oral health and the availability of and access to appropriately targeted dental services for homeless people should be incorporated into national health and homelessness strategies and policies.
- (b) **Local area level:** oral health improvement outcomes for homeless people should be incorporated into Single Outcome Agreements, NHS Board Health and Homelessness Plans, and Local Authority Shared Assessments.
- (c) **Agency level:** it is recommended that oral health promotion for homeless people be integrated not only into other healthcare sectors but also into the housing, education and employment sectors, in order to normalise oral health within the wider homelessness sector. Inter-agency working should be supported by the provision of appropriate and acceptable training across all sectors to increase the understanding of homelessness and oral health in order to increase the capacity of all staff working with homeless people in Scotland.

Figure 37: Smile4life Intervention: Assessing readiness to attend for routine dental care



List of Abbreviations

ANOVA:	Analysis of Variance	FEANTSA:	European Federation of National Organisations working with the Homeless
BDA:	British Dental Association		
CES-D:	Center for Epidemiological Studies Depression Scale	MDAS:	Modified Dental Anxiety Scale
CI:	Confidence Intervals	OHIP:	Oral Health Impact Scale
D ₃ MFT:	Obvious decay experience	OHI-S:	Simplified Oral Hygiene Index
ETHOS:	European Typology of Homelessness	SPSS:	Statistical Package for the Social Sciences
		WCMT:	Weighted Case Mix Tool



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Glossary of Terms

ANOVA - Analysis of Variance

A test of the statistical significance of the differences among the mean scores of two or more groups on one or more variables.

Chi-square test

A statistical test used to determine the probability of obtaining the observed results by chance, under a specific hypothesis.

Confidence Intervals

The confidence intervals for the mean give us a range of values around the mean where we expect the “true” (population) mean is located.

Dental Caries

Cavities or holes in the outer two layers of a tooth — the enamel and the dentine. Dental caries are caused by bacteria which metabolise carbohydrates (sugars) to form organic acids which dissolve tooth enamel. If allowed to progress, dental caries may result in tooth decay, infection, and loss of teeth.

D₃MFT

Measurement of obvious decay experience - the total D₃MFT is a sum of the decayed (D₃), missing (M) and filled (F) teeth.

Edentulous

Being without teeth. Complete loss of all natural teeth can substantially reduce quality of life, self-image, and daily functioning.

Factor Analysis

The main applications of factor analysis are: (1) to reduce the number of variables and (2) to detect how the variables form into a scale.

Frequency Distribution

An organised display of a set of data that shows how often each different piece of data occurs.

Grouping variable

A grouping variable is used to identify group membership for individual cases in the data.

Likert Scale

A multi-point rating scale that measures the strength of a subject’s agreement with a clear statement. Developed by Likert, it comprises of items that have responses on a continuum and response categories such as ‘strongly agree’, ‘agree’, ‘disagree’, and ‘strongly disagree’.

National Dental Inspection Programme

Annual programme to assess the oral health of five and eleven year-olds in Scotland.

Oral mucosa

The skin of the mouth. It is divided into three areas: lips, roof of mouth and cheeks, and tongue.

Scheffe post hoc test

Determines the statistical differences in mean scores between three or more groups.

SPSS (Statistical Package for the Social Sciences)

The computer program SPSS was released in its first version in the 1960s, and is among the most widely used programs for statistical analysis in social science. It is also used by market researchers, health researchers, survey companies, government, education researchers, and others.

T-test

The t-test is the most commonly used statistic to assess the differences in means between two groups.

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Appendices

Appendix 1:

Questionnaire

Appendix 2:

Training day

Appendix 3:

Training day programme

Appendix 4:

NHS Boards participating
in **Smile4life**

Appendix 5:

Oral health provision for
homeless populations
by NHS Board

Appendix 6:

Ethical approval
documentation

Appendix 7:

Participant information

Appendix 8:

In-depth interview
topic guide

Appendix 1:

Questionnaire

CONFIDENTIAL MEDICAL HISTORY FORM

Patient Code: <input type="text"/> <input type="text"/> <input type="text"/> <input type="text"/>			Date of Birth: <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> / <input type="text"/> <input type="text"/> D D M M Y Y		
	Yes	No			
Are you receiving treatment from a doctor, hospital, clinic or Specialist?	<input type="checkbox"/>	<input type="checkbox"/>			
Are you taking or using any medicines, pills, syrups, ointments, puffers or injectors prescribed for you by a doctor? <i>If yes, please list:</i>	<input type="checkbox"/>	<input type="checkbox"/>			
<div></div>					
Have you ever been told you had a heart murmur?	<input type="checkbox"/>	<input type="checkbox"/>			
Have you had angina?	<input type="checkbox"/>	<input type="checkbox"/>			
Have you had blood pressure problems?	<input type="checkbox"/>	<input type="checkbox"/>			
Have you ever had a heart attack?	<input type="checkbox"/>	<input type="checkbox"/>			
Do you suffer from any infection disease, e.g. HIV, hepatitis?	<input type="checkbox"/>	<input type="checkbox"/>			
Do you have asthma or any other lung disease?	<input type="checkbox"/>	<input type="checkbox"/>			
Do you have epilepsy?	<input type="checkbox"/>	<input type="checkbox"/>			
Do you have diabetes?	<input type="checkbox"/>	<input type="checkbox"/>			
Do you bruise or bleed easily?	<input type="checkbox"/>	<input type="checkbox"/>			
Are you allergic to any medicine, foods or materials?	<input type="checkbox"/>	<input type="checkbox"/>			
Are you pregnant?	<input type="checkbox"/>	<input type="checkbox"/>			
Have you ever had rheumatic fever?	<input type="checkbox"/>	<input type="checkbox"/>			
Do you chew tobacco, pan or betel?	<input type="checkbox"/>	<input type="checkbox"/>			
Are there any other details you feel we should know about your medical history?	<input type="checkbox"/>	<input type="checkbox"/>			
<div></div>					

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Appendix 1: Questionnaire (Continued)

DENTAL HEALTH QUESTIONNAIRE

Gender: ☐ Male ☐ Female

Ethnic origin: ☐ White ☐ African-American ☐ Asian ☐ Chinese

Registered with a dentist: ☐ Yes ☐ No

Occupation or previous occupation:

Marital status: ☐ Single ☐ Married ☐ Partner ☐ Separated ☐ Divorced

Do you have children? ☐ Yes ☐ No

Living status:

Roofless	Living rough	<input type="checkbox"/> Public space or external space
	In emergency accommodation	<input type="checkbox"/> Night shelter
Houseless	In accommodation for the homeless	<input type="checkbox"/> Homeless hostel <input type="checkbox"/> Temporary accommodation <input type="checkbox"/> Transitional supported accommodation
	In Women's shelter	<input type="checkbox"/> Women's shelter accommodation
	In accommodation for Immigrants	<input type="checkbox"/> Temporary accommodation/reception centres <input type="checkbox"/> Migrant workers' accommodation
	Released from institutions	<input type="checkbox"/> Prison/Young Offenders institutions <input type="checkbox"/> Hospital <input type="checkbox"/> Children's institutions/homes
	Receiving longer-term support (due to homelessness)	<input type="checkbox"/> Residential care for older homeless people <input type="checkbox"/> Supported accommodation for formerly homeless people

Reason for homelessness:

	Yes	No	Prefer not to say
Have you ever used drugs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you continue to use drugs?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
IVDU?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you drink alcohol most days?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Do you smoke cigarettes? if yes, how many per day? <input type="text"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

	Not anxious	Slightly anxious	Fairly anxious	Very anxious	Extremely anxious
If you went to your dentist for TREATMENT TOMORROW, how would you feel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you were sitting in the WAITING ROOM (waiting for treatment), how would you feel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you were about to have your TEETH DRILLED, how would you feel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you were about to have your TEETH SCALED AND POLISHED, how would you feel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
If you were about to have a LOCAL ANAESTHETIC INJECTION in your gum, above an upper back tooth, how would you feel?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Appendix 1:

Questionnaire (Continued)

	Never	Hardly ever	Occasionally	Fairly often	Very often
Have you ever had trouble pronouncing any words because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you felt your sense of taste has worsened because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you had painful aching in your mouth?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you found it uncomfortable to eat any foods because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been self-conscious because of your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you felt tense because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Has your diet been unsatisfactory because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you had to interrupt meals because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you found it difficult to relax because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been a bit embarrassed because of your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been a bit irritable with other people because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you had difficulties doing your usual jobs because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you felt that life in general was less satisfying because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Have you been totally unable to function because of problems with your teeth, mouth or dentures?	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	Rarely or none of the time (less than 1 day)	Some or little of the time (1-2 days)	Occasionally or a moderate amount of the time (3-4 days)	Most or all of the time (5-7 days)	
I was bothered by things that usually don't bother me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I did not feel like eating; my appetite was poor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt that I could not shake off the blues even with help from my family or friends	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt I was just as good as other people	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I had trouble keeping my mind on what I was doing	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt depressed	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt that everything I did was an effort	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt hopeful about the future	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I thought my life had been a failure	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt fearful	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
My sleep was restless	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I was happy	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I talked less than usual	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt lonely	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
People were unfriendly	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I enjoyed life	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I had crying spells	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt sad	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I felt that people dislike me	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
I could not get "going"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	

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Appendix 1:

Questionnaire (Continued)

Dental Attendance				
Have you been to a dentist in the last year? <input type="checkbox"/> Yes <input type="checkbox"/> No				
If no, how long ago was your last appointment with a dentist?				
<input type="checkbox"/> Between 1 to 2 years ago	<input type="checkbox"/> Between 3 to 5 years ago	<input type="checkbox"/> Between 10 to 20 years ago	<input type="checkbox"/> Never	
<input type="checkbox"/> Between 2 to 3 years ago	<input type="checkbox"/> Between 5 to 10 years ago	<input type="checkbox"/> More than 20 years ago		
What made you go to the dentist the last time you went?				
<input type="checkbox"/> Trouble with teeth	<input type="checkbox"/> Check-up	<input type="checkbox"/> Other:	<input type="text"/>	
Dental Treatment				
Have you ever had:	Yes	No	Don't know	
Fillings	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
An injection in your gum	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
An injection in your arm	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
X-rays	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Extractions	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Laughing gas (RA)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fluoride treatments	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Fissure sealants	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
General anaesthetic (gas)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
An abscess	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Crowns	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Bridge work	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
A scale and polish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
Dentures	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	
	Definitely feel like that	To some extent	Don't know	Don't feel like that
If I had toothache I'd rather take painkillers than go to the dentist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The worst part of going to the dentist is the waiting	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I'd like to be able to drop in at the dentist without an appointment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Dental receptionists are not very helpful or welcoming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Going to the dentist is like being processed on a conveyor belt	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I'd like to know more about what the dentist is going to do and why	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't want fancy (intricate) dental treatment	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I don't like lying flat in the dental chair	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
I find NHS dental treatment difficult to find	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

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Homeless People's Oral Health Improvement Survey

[illegible]

Appendix 2: Training Day

A training day to standardise dental examiners and to ensure agreement on questionnaire items was held on 2 October 2008. Thirty-one delegates attended, including staff from NHS Ayrshire & Arran, NHS Forth Valley, NHS Greater Glasgow & Clyde, NHS Highland, NHS Lanarkshire, NHS Lothian, and NHS Tayside. The day consisted of:

1. Oral medicine presentation: Dr Anita Nolan, Consultant in Oral Medicine, NHS Tayside
2. Questionnaire presentation: Emma Coles, Development and Evaluation officer, DHSRU
3. Workshop and standardisation for collection of clinical data: Dr Gail Topping, DHSRU, and Chris Cunningham, NHS Lothian
4. Workshop on the Weighted Case Mix Tool: Rhona Brown, NHS Highland



Appendix 3: Training Day Programme



Homeless Training Day: Thursday 2 October 2008

Dundee Dental Hospital & School, Dundee

- 10:30** **Arrive - Coffee/Tea**
(Seminar Room, 7th Floor)
- 10:45** **Anita Nolan**
(Large Lecture Theatre, 6th Floor)
Oral Ulceration – sinister and otherwise
- 11:45** **Ruth Freeman & Emma Coles**
(Large Lecture Theatre, 6th Floor)
Questionnaire for homeless people – Questions & Answers
- 12:30** **Lunch** (Seminar Room, 7th Floor)
- 13:30** **Group 1 with Gail Topping & Chris Cunningham**
(Large Lecture Theatre, 6th Floor)
Basic NDIP
- Group 2 with Rhona Brown & Ruth Freeman**
(Small Lecture Theatre, 6th Floor)
Weighted Case Mix Tool
- 14:30** **Group 2 with Gail Topping & Chris Cunningham**
(Large Lecture Theatre, 6th Floor)
Basic NDIP
- Group 1 with Rhona Brown & Ruth Freeman**
(Small Lecture Theatre, 6th Floor)
Weighted Case Mix Tool
- 15:30** **Plenary**
(Large Lecture Theatre, 6th Floor)
Ruth Freeman
- 16:00** **Close**

Confirmed Attendees:

Speaker: Ruth Freeman, Dental Health Services Research Unit, Dundee
Speaker: Emma Coles, Dental Health Services Research Unit, Dundee
Speaker: Gail Topping, Dental Health Services Research Unit, Dundee
Speaker: Anita Nolan, Dundee Dental School
Speaker: Chris Cunningham, Assistant Clinical Director, NHS Lothian
Speaker: Rhona Brown, NHS Highland
 Abigail Heffernan (dentist) and Claire Marshall (nurse), NHS Greater Glasgow
 Anna Grajek (dentist), Adam Lonsdale (dentist), Jacqui Devine and Liz Rafferty (dental nurses), NHS Lothian
 Gina O'Mailley, CDO, NHS Greater Glasgow
 Maura Edwards, CDPH, NHS Ayrshire & Arran
 John Blair, SDO, NHS Ayrshire & Arran
 ??+ 1 Public Health nurse for Homeless People, NHS Ayrshire & Arran
 2 x NHS Forth Valley (D Richards to provide names of team)
 Albert Yeung, Anne Moore, Ingrid Jauhar, Monica Downie, Jackie Morrison (dentists); Jean Kerr, Janice Bryson (nurses), NHS Lanarkshire
 Gillian Elliott, SDO; Hal Esler, CDO; Andrea Sturrock, Dental nurse; Nargis Sultan, Dental Hygienist; Mary Walkden, Specialist HV, Homeless Health Outreach Team, NHS Tayside

Appendix 4:

NHS Boards participating in Smile4life

NHS Ayrshire & Arran

NHS Ayrshire & Arran is situated in south west Scotland and has a population of around 367,020. The majority of the population live in urban areas, of which Ayr and Kilmarnock are the largest in the region, although a significant proportion live in rural areas.

NHS Forth Valley

Located in central Scotland, NHS Forth Valley provides healthcare services in the Clackmannanshire, Falkirk and Stirling areas. It covers an area of 2,643 square kilometres with a population of 281,000.

NHS Greater Glasgow & Clyde

Located in west central Scotland, NHS Greater Glasgow & Clyde was created from the amalgamation of NHS Greater Glasgow and part of NHS Argyll and Clyde in 2006. Covering a population of 1,196,335, it is the largest NHS Board in the United Kingdom.

NHS Highland

Geographically, NHS Highland covers the largest and most sparsely populated part of the UK, with a mountainous terrain, rugged coastline and populated islands. The area covers 33,028km², (around 41% of Scotland), with a population of 300,000 people.

NHS Lanarkshire

NHS Lanarkshire is responsible for the health of around 553,200 people living within the council areas of North Lanarkshire and South Lanarkshire (4,732 km²) in south central Scotland.

NHS Lothian

NHS Lothian provides healthcare services in the City of Edinburgh, East Lothian, Mid Lothian and West Lothian areas to a population of around 800,000 people, the second largest residential population in Scotland.

NHS Tayside

NHS Tayside provides healthcare services to around 388,780 people living in Angus, Dundee and Perth and Kinross.

Deprivation at NHS Board level

Table 28 shows the local and national share of the 15% most deprived data zones by NHS Board. The data are taken from the Scottish Index of Multiple Deprivation (SIMD) 2009[34]. Data zones are the key small-area statistical geography in Scotland. They are population-based, with an average of 750 people living in each one. SIMD data can be used for comparing larger geographical areas by looking at the proportion of the 15% most deprived data zones contained within each of the areas.

The NHS Boards with the largest proportions of the 15% most deprived data zones in Scotland are Greater Glasgow & Clyde (45.3%), Lanarkshire (12.6%), Ayrshire & Arran (9.6%), Lothian (8.4%) and Tayside (7.0%). Between them, these five NHS Boards nationally contain 83% of the 15% most deprived data zones in Scotland, with two thirds contained in the first three.

Appendix 4:

NHS Boards participating in Smile4life (Continued)

Table 28: Data zones in the 15% most deprived on the overall SIMD by NHS Board							
NHS Boards	Total number of data zones	15% Most deprived data zones (Overall SIMD)					
		SIMD 2006			SIMD 2009		
		No. of data zones	% of local area	% of Scotland	No. of data zones	% of local area	% of Scotland
Ayrshire & Arran	480	74	15.4%	7.6%	94	19.6%	9.6%
Borders	130	3	2.3%	0.3%	5	3.8%	0.5%
Dumfries & Galloway	193	11	5.7%	1.1%	9	4.7%	0.9%
Fife	453	47	10.4%	4.8%	55	12.1%	5.6%
Forth Valley	371	41	11.1%	4.2%	40	10.8%	4.1%
Grampian	684	33	4.8%	3.4%	32	4.7%	3.3%
Greater Glasgow & Clyde	1473	469	31.8%	48.1%	442	30.0%	45.3%
Highland	414	27	6.5%	2.8%	26	6.3%	2.7%
Lanarkshire	726	118	16.3%	12.1%	123	16.9%	12.6%
Lothian	992	83	8.4%	8.5%	82	8.3%	8.4%
Orkney	27	0	0.0%	0.0%	0	0.0%	0.0%
Shetland	30	0	0.0%	0.0%	0	0.0%	0.0%
Tayside	496	70	14.1%	7.2%	68	13.7%	7.0%
Western Isles	36	0	0.0%	0.0%	0	0.0%	0.0%
SCOTLAND	6505	976	15.0%	100.0%	976	15.0%	100.0%
Source: Scottish Government. Scottish Index of Multiple Deprivation 2009: General Report. Edinburgh: Scottish Government, 2009.							

Appendix 5:

Oral health provision for homeless populations by NHS Board

NHS Board	Current Provision					
	Treated as part of mainstream service	Dedicated fixed location surgery/drop-in	Dedicated fixed location surgery/ appts	In hours mobile dental unit	Out of hours mobile dental unit	
Ayrshire & Arran	•					
Borders	•					
Dumfries & Galloway	•					
Fife	•					
Forth Valley	•	•	•			
Greater Glasgow & Clyde	•					
Highland	•			•		
Lanarkshire	•		•			
Lothian		•	•			
Orkney	•					
Shetland	•					
Tayside	•	•	•			
Western Isles	•					

	Current Provision
	Comments
	Homeless patients attend Dental Access Centre or are appointed to Salaried Dental Clinic at nearest convenient location. All telephone calls are received through central point which allows appointment to be made at any clinic within A&A. Staff are doing treatment session, with mixture of patients, not just homeless people. Every attempt is made to given an appointment on the day of the patient phoning.
	Dental Access enquiry line, patients seen that day if in pain. All clinics within NHS Borders. Normal working hours. Emergency service evening and weekends: accessed through NHS24, treatment carried out at Borders General Hospital. Attendance of homeless patients not noted as they are treated as part of normal service.
	Daytime, centrally-triaged emergency service for unregistered patients across region, via salaried service in 5 salaried service clinic sites, co-ordinated via Dental Helpline. All cases classified as emergency or urgent are appointed to dedicated service time with salaried GDP within 24 hours. Largest centres of population (Dumfries and Stranraer) no longer have significant waiting times for dental access and registration.
	As homeless patients are treated as part of the mainstream salaried dental service records of specific attendance levels and clinical resources used are not kept. Any adult/child in pain is seen within 24 hours. If the service is made aware that a patient is homeless, priority care will be given. Work has recently been carried out to raise the profile of the service offered to homeless people and encourage attendance.
	Mainstream: when access was a problem fast track was available for socially excluded patients for both routine and emergency care. As the access to dental care has improved, dental care has been essentially integrated into mainstream provision. Fixed location drop-in/appointments: there was a fixed surgery with fixed times to see socially-excluded patients residing in a multiply-deprived area. As patients always arrived at the end of a drop in clinic regardless of the time and usage was good, the decision was taken to change to fixed appointments.
	Homeless patients can register with a GDP. Homeless referrals received by some Salaried Dental Practitioners in sites. Patients can attend Floor 1 of the Glasgow Dental Hospital if in pain and not registered.
	Homeless patients are treated ad-hoc and opportunistically through mainstream services. Mobile unit only at the Homeless Shelter in Inverness. Out of hours care accessed via NHS24 and SEDS.
	Mainstream: homeless people treated by many GDPs as part of mainstream service. Fixed location appointments: one session per week on a Wednesday evening from 6-9pm, staffed by one dentist, two dental nurses and one security personnel.
	Fixed location drop-in/appointments: 1. Cowgate Clinic, Edinburgh: dedicated for homeless people or those at risk of homelessness. Two days per week, 9.00am-4.30pm, including 3 hour drop-in period. 1 dentist and 2 dental nurses each day. Average attendance 6 patients per drop-in session and an additional 6-8 offered appointments. 2. Howden Clinic, Livingston: mainly aimed for drug users but also open access for homeless people in West Lothian. Two days per week, hours and attendance rates as above. Approx 1 in 5 patients are homeless. N.B. additional clinics are held at Spittal Street Clinic in Edinburgh (4 days per week) and Roodlands Hospital in East Lothian (1 day per week) which are predominantly aimed at drug users and have similar staffing and attendance rates to those noted above. Approx 1 in 8 patients are homeless. Patients must access care through drop-in sessions but if prolonged treatment is required and patients are willing to show commitment then they will be offered appointments for continuing care. If appointment is missed without advanced notice or good cause then patient is not given further appointment but will need to access care via drop-in again.
	Homeless people treated as part of mainstream service due to very small numbers.
	We have surgeries in all major population centres and a surgery within a Salvation Army centre, shared with other medical specialities. Over the years, it has been our experience that neither a pure drop-in nor pure appointment service works well as a balance between need, demand and resource. At all our fixed clinics, people experiencing homelessness are a priority and will not go on a waiting list for care. We offer appointments to those who seem like a good bet for attendance and a small drop in facility at the SA centre. Resource committed at any given time depends on uptake of care.

Appendix 5:

Oral health provision for homeless populations by NHS Board (Continued)

NHS Board	Past Provision		
	Service	Reason for withdrawal	Additional comments or changes made to service
Ayrshire & Arran	N/A		
Borders	Dental needs assessment filled in by Homelessness Nurse when she was working with a client. This ensured they were on waiting list or attending dentist. We could also get in touch for appointments through the nurse.	Homelessness Nurse role was not made permanent.	
Dumfries & Galloway	Access clinic sessions (for people not registered with a dentist at main CDS clinic in Dumfries) withdrawn 2008. Drop-in wk/end emergency clinic sessions – integrated EDS service introduced 2009.	Increase in availability of NHS registration and access so great that service no longer justified or appropriate.	Referral to Community Special Care programme available via multiple agencies, including Social Work, Community and Adult Mental Health Services, Health Improvement etc.
Fife	N/A		
Forth Valley	Drop-in replaced by fixed appointment times	Multiple patients appeared at the end of every clinic. The service had to be rationalised to allow all patients access to attempt to normalise the service provision.	The need to place demands on the patients in an attempt to force patients to develop positive habit of attendance was required. A burgeoning patient load of non-homeless patients abusing this service as a fast track to access routine dental care was also an issue.
Greater Glasgow & Clyde	Withdrawn - Dedicated homeless service in fixed surgeries in 3 sites in Glasgow (daytime provision, full time 10 sessions per week) which superseded evening drop-in service as part of City Mission (1 session per week).	Transferred to mainstream dental services as part of strategic change. Many homeless hostels in Glasgow closed at this time.	
Highland	N/A		
Lanarkshire	N/A		
Lothian	N/A		
Orkney	N/A		
Shetland	N/A		
Tayside	MDU at a drop-in centre on the same day every week.	Attendance was very variable and resource was better allocated to a central location.	
Western Isles	N/A		

Appendix 6:

Ethical Approval Documentation

National Research Ethics Service Ruling (email)

From: NRES Queries Line [mailto:queries@nres.npsa.nhs.uk]

Sent: Mon 21.4.08 11:39

To: Jennifer Collins

Subject: RE: Query regarding research/service evaluation

Thank you for your query.

Our leaflet “Defining Research”, which explains how we differentiate research from other activities, is published at: <http://www.nres.npsa.nhs.uk/applicants/help/guidance.htm#audit>

Based on the information you provided I would say this is service evaluation, our advice is that the project is not considered to be research according to this guidance. Therefore it does not require ethical review by a NHS Research Ethics Committee.

If you are undertaking the project within the NHS, you should check with the relevant NHS care organisation(s) what other review arrangements or sources of advice apply to projects of this type. Guidance may be available from the clinical governance office.

Although ethical review by a NHS REC is not necessary in this case, all types of study involving human participants should be conducted in accordance with basic ethical principles such as informed consent and respect for the confidentiality of participants. When processing identifiable data there are also legal requirements under the Data Protection Act 2000. When undertaking an audit or service/therapy evaluation, the investigator and his/her team are responsible for considering the ethics of their project with advice from within their organisation. University projects may require approval by the university ethics committee.

This response should not be interpreted as giving a form of ethical approval or any endorsement of the project, but it may be provided to a journal or other body as evidence that ethical approval is not required under NHS research governance arrangements.

However, if you, your sponsor/funder or any NHS organisation feel that the project should be managed as research and/or that ethical review by a NHS REC is essential, please write setting out your reasons and we will be pleased to consider further.

Where NHS organisations have clarified that a project is not to be managed as research, the Research Governance Framework states that it should not be presented as research within the NHS.

Regards

Queries Line

National Research Ethics Service
National Patient Safety Agency
4-8 Maple Street
London W1T 5HD

Website: www.nres.npsa.nhs.uk

Email: queries@nres.npsa.nhs.uk

Appendix 6:

Ethical Approval Documentation (Continued)

UREC approval (email)

From: Peter Willatts [mailto:p.willatts@dundee.ac.uk]
Sent: 31 March 2009 14:11
To: Emma Coles
Cc: Elizabeth Evans
Subject: Ethics application UREC 9005, An oral health preventive intervention for homeless populations

Dear Emma

We see no ethical problems with your proposal, and I am happy to approve your study. You may begin the research. We do suggest you make a couple of minor changes:

1. In the Consent Form, you should add a line for the printed Name of the Participant. Signatures can often be difficult to read.
2. In the Participant Information Sheet, please add information about how long you will keep the audio recordings before they are destroyed.

Could you please send copies of the changed documents by email to me, rather than the UREC secretary Elizabeth Evans, who is on sick leave at the moment?

With best wishes,

Peter Willatts

Chair, University Research Ethics Committee

Dr Peter Willatts
School of Psychology, University of Dundee,
Nethergate, Dundee, DD1 4HN, UK.

Email: p.willatts@dundee.ac.uk

Tel: +44 (0)1382 384618; 384623

Fax: +44 (0)1382 229993

The University of Dundee is a registered Scottish charity, No: SC015096

Appendix 7:

Participant information

SMILE4LIFE: IMPROVING DENTAL HEALTH SERVICES FOR HOMELESS PEOPLE

Description and written consent

Before you decide if you want to take part, please read this very carefully. It tells you all about the survey and what will happen if you do take part.

What is the purpose of the survey?

The survey is to improve dental services for homeless people in Scotland.

Who will be taking part?

Homeless people in seven areas of Scotland.

What will happen to me during the survey?

We'll ask you some questions about your health, your dental health, and your feelings about visiting the dentist. This will take about 15 minutes and will be confidential.

You'll then have your mouth and teeth looked at. If you need dental treatment, you'll be given information and advice about what to do next.

Will everyone be asked to do the same thing?

Yes: everyone will be asked the same questions and receive a dental examination.

Why should I take part in the survey?

To help us improve dental services for homeless people in Scotland.

Do I have to take part in the survey?

No: it's completely up to you.

Can I withdraw from the survey?

Yes: you can withdraw from the survey at any time. You don't need to give a reason.

What about confidentiality?

Everything will be completely confidential.

Your rights

If you have any questions about the survey, please contact **Emma Coles** on **01382 420053** during office hours.

If you're unsure about anything or need more information, then please ask the researcher.

Thanks for thinking about taking part. If you want to be involved, you can be sure that your help will have a direct benefit on homeless people in Scotland.

Appendix 8:

In-depth interview topic guide

INTERVIEW TOPICS

Profile

- Age/gender
- reason for homelessness
- housing status
- dental registration

Oral health and general health

- Current oral health status
- Satisfaction with appearance of teeth and mouth
- Feelings and concerns about oral health
- Oral hygiene routine and awareness about looking after teeth and preventing decay
- General health

Access to services

- Most recent dental visit
- Dental history
- Knowledge and use of available oral health services
- Barriers inhibiting access to oral health care (e.g. dental anxiety, finding a dentist, cost)

Oral ill-health impacts

- Pain or discomfort
- Eating problems
- Self-consciousness or embarrassment about appearance
- Effect on self-esteem and self-confidence

What would be needed to maintain good dental health in the future?

QUESTIONS FOR PARTICIPANTS ATTENDING A DENTAL CLINIC

How long have you been coming to the dental clinic?

How did you find out about it?

How do you feel about coming here to the dental clinic?

- What do you like about it? What do you dislike about it?
- Do you feel anxious or nervous about coming here?
- What sort of treatment have you been having?
- What kind of dental problems did you have before you started coming here?

Is there any way that the service you get here could be improved?

What would you change about it?

Did you have regular dental treatment elsewhere before you started coming here?

- If yes, where? What kind of treatment? If no, why? What were the reasons why you didn't go to the dentist?

Do you know if there are any other dental services available to you?

Address for Correspondence: Dental Health Services Research Unit
Mackenzie Building, Kirsty Semple Way, Dundee, DD2 4BF
Email: e.coles@cpse.dundee.ac.uk

